An Oceanographic Survey of the Canadian Arctic Archipelago March - 1982

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by

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PREFACE

This report was prepared by D.B. Fissel, D.N. Knight and J.R. Birch, Arctic Sciences Ltd., Sidney, B.C. under Fisheries and Oceans Contract FP833-1-2242. The Scientific Authority for this contract was Mr. R.A. Lake, Frozen Sea Research Group, Institute of Ocean Sciences, Sidney, B.C.

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ABSTRACT

D.B. Fissel, D.N. Knight and J.R. Birch,1984. An Oceanographic Survey of the Canadian Arctic Archipelago.
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The results of a CTD survey of the Canadian Arctic Archipelago are presented. Over a nineteen-day period, March 19 to April 6, 1982, 70 CTD stations were occupied. In addition, nutrient samples were collected at 30 of these locations.

A cold halocline layer is present in Amundsen Gulf and Lancaster Sound but much less evident in other areas. It is suggested that this layer originates in the southeastern Beaufort Sea and in northwestern Baffin Bay due to the large amount of surface salinization associated with the high rate of sea-ice formation expected in these areas. This cold, saline water then descends and is advected into the adjoining areas of Amundsen Gulf and Lancaster Sound, within the Arctic Archipelago. In the transition zone between the Arctic Water and Atlantic Water layers, the temperature-salinity (TS) properties are modified from the western to central portions of the Archipelago. On a constant salinity surface, warming of about 0.1C° occurs.

The baroclinic component of the near-surface geostrophic circulation relative to the deeper water within the Archipelago indicates a net movement into Parry Channel from the north, west and south. The resulting eastward current exits through Lancaster Sound. The strongest geostrophic flows, exceeding 15 cm/s, were found in Penny Strait and Byam Martin Channel. More typically, the near-surface geostrophic currents range from 1 to 8 cm/s. In Amundsen Gulf, a weak (<2 cm/s) cyclonic gyre extends over the central portion of Amundsen Gulf, with a relatively strong (10 cm/s) westerly inflow from Dolphin and Union Strait. In western Amundsen Gulf, a clockwise gyre with geostrophic speeds of 4 cm/s flows eastward on the northern side, turns south and exits westward on the southern side.

Key words: Arctic Archipelago, Arctic Water, Atlantic Water, temperature, salinity.

RESUME

D.B. Fissel, D.N. Knight and J.R. Birch, 1984. An Oceanographic Survey of the Canadian Arctic Archipelago.
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Le présent rapport porte sur les résultats d'un levé CTP mené dans l'archipel Arctique du 19 mars au 6 avril 1982. Des échantillons de bioéléments ont été recueillis à 30 des 70 stations CTP occupees pendant cette période de 19 jours.

Un halocline froid était présent dans le golfe Amundsen et le détroit de Lancaster, mais il était beaucoup moins évident dans les autres régions. On formule l'hypothèse que cette couche prend sa source dans la partie sud-est de la mer de Beaufort et la partie nord-ouest de la baie Baffin et qu'elle est causée par la salinisation importante à la surface associée avec le taux élevé de formation de glace de mer dans ces régions. Après la descente de cette eau salée et froide, l'advection l'entraine vers les parties adjacentes du golfe Amundsen et du détroit de Lancaster, dans les limites de l'archipel Arctique. Dans la zone de transition entre les couches aqueuses de l'Atlantique et de l'Arctique, les propriétés de température-salinité (TS) se modifient de la zone occidentale à la zone centrale de l'archipel. En présence d'une salinité constante, un réchauffement d'environ 0,1°C a lieu.

La composante barocline de la circulation géostrophique près de la surface par rapport aux eaux plus profondes de l'archipel dénote un déplacement net du nord, de l'ouest et du sud vers le chenel Parry. Le courant produit en direction de l'est passe par le détroit de Lancaster. Les plus forts courants géostrophique, supérieurs à 15 cm/s, ont été découverts dans les détroits de Penny et de Byam Martin. En général, les courants géostrophiques près de la surface varient de 1 à 8 cm/s. Dans le golfe Amundsen, un faible tourbillon cyclonique (<2 cm/s) se prolonge jusque sur la partie centrale du golfe Amundsen, doublé d'un afflux relativement élevé (10 cm/s) que se dirige vers l'ouest en provenance du détroit de Dolphin et Union. Dans le golfe Amundsen occidental, un tourbillon à droite avec des vitesses géotrosphiques de 4 cm/s se dirige vers l'est dans la partie septentrionale, tourne vers le sud et sort vers l'ouest dans la partie méridionale.

Mots-cles: archipel Arctique, eau de l'Arctique, eau de l'Atlantique, température, salinité.

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1. INTRODUCTION

In recent years, a number of industrial proposals have been advanced for the year-round transport of natural resources through the channels of the Canadian Arctic Archipelago. Such developments require a thorough understanding of environmental conditions, including the regional oceanography, both to assess and to minimize the effect on the natural environment and to optimize the efficiency and safety of the proposed development.

As one means of improving the understanding of the oceanography of the area, three coordinated field studies were undertaken in the spring of 1982. This report presents the data and preliminary results of one of these field studies: an oceanographic survey of many of the channels of the Archipelago, using a twin-engined aircraft. Landings on the sea-ice were made at 70 stations over a 19-day period, beginning March 19, 1982. At each site, the temperature and salinity of the water column were measured from about 5 m below the free water surface to 5 m above the sea floor using a Guildline CTD. At approximately one-third of the stations, water samples were collected for subsequent chemical analysis of dissolved nutrients (nitrate, phosphate and silicate).

Other components of the 1982 oceanographic program included intensive studies of the oceanography of Prince of Wales Strait-Viscount Melville Sound and Barrow Strait. These studies were conducted by two agencies of the Department of Fisheries and Oceans: the Frozen Sea Research Group, Institute of Ocean Sciences, Sidney, B.C. and the Bayfield Laboratory for Marine Science and Surveys, Burlington, Ontario. In both of these programs, time series current meter and water level measurements were collected in addition to CTD profiles. To facilitate use of the combined results of the oceanographic studies, inter-comparisons were made through the simultaneous operation of CTD's at the same location.

The specific scientific objectives of the present study were:

1) to determine the geostrophic flow field through the selected channels;

2) to identify water masses by their physical (temperature-salinity) and chemical (dissolved nutrient) properties;

3) to examine the spatial variability of the water properties within the Archipelago, and from these variations infer the possible degree of common origin of water masses and the amount of water exchange between the channels;

4) to determine the year-to-year variability of water properties and geostrophic flow fields by comparing the data with data obtained in the same locations in previous years.

In this report, a review of the physical characteristics of the region including bathymetry and sea-ice conditions is presented in Section 2, while Section 3 contains a review of previous oceanographic studies. The data collection procedures and accuracies and data processing techniques are described in Section 4 and Appendix 1, while complete plots and listings of the CTD and nutrient data are presented in Appendices 2, 3 and 4. In Section 5, 1982 oceanographic data are used to describe the distribution of water properties and geostrophic velocities. The measurement program is summarized and the major findings are presented in Section 6.

2. PHYSICAL SETTING

The Canadian Arctic Archipelago encompasses a vast area extending from latitude 68°N to 82°N, a north-south distance of 1500 km and from longitude 60°W to 130°W, a distance of 1900 km at 70°N. The area consists of many islands separated by a complex pattern of channels (Figure 1). To the north and west, the region is bounded by the Arctic Ocean and the southeastern Beaufort Sea. Three of the largest islands within the area (Ellesmere, Devon and Baffin Islands) mark its eastern boundary. Between these islands and the North American mainland, the waterways of the Archipelago are connected to the Baffin Bay-Davis Strait-Labrador Sea by Jones and Lancaster Sounds and Fury and Hecla Strait. Northern Baffin Bay and the Arctic Ocean are directly linked by Nares Strait, separating Ellesmere Island and Greenland (Figure 2).

The region has often been subdivided into three subareas, with the central of these called Parry Channel, consisting of M'Clure Strait, Viscount Melville Sound, Barrow Strait and Lancaster Sound. To the north of Parry Channel lie the Queen Elizabeth Islands and to the south is another complex array of water channels.

The total area of the region is about 2.2×10^6 km^2. Of this total, an area of approximately 0.9×10^6 km^2 is covered by sea water: 0.3×10^6 km^2 to the north of Parry Channel, 0.2×10^6 km^2 in Parry Channel itself, and 0.4×10^6 km^2 to the south of Parry Channel (Walker, 1977).

2.1 BATHYMETRY

The bathymetry of the area (Figure 2) is complex, with the channels of the Archipelago being generally shallower than those of the major adjoining oceanic regions, the Arctic Ocean and Baffin Bay. To the north and west, free passage into the Archipelago is limited by the continental shelf, ranging in width from 200 km in the Beaufort Sea to less than 10 km off Ellesmere Island. The continental shelf limits the free passage of water to maximum depths of about 450 m into the Queen Elizabeth Islands (Prince Gustaf Adolf Sea and Peary Channel), to about 380 m into M'Clure Strait and to about 330 m into Amundsen Gulf.

To the east, the study area is bounded by the relatively deep waters of Baffin Bay with depths up to 2300 m. However, exchange between Baffin Bay and the Atlantic Ocean is limited by the presence of the Davis Strait sill with depths of 700 m. Fury and Hecla Strait provides an alternate connection to Davis Strait by means of Foxe Basin and Hudson Strait. However, Foxe Basin is shallow with maximum depths of less than 200 m while the limiting depth in Fury and Hecla Strait is only 50 m.

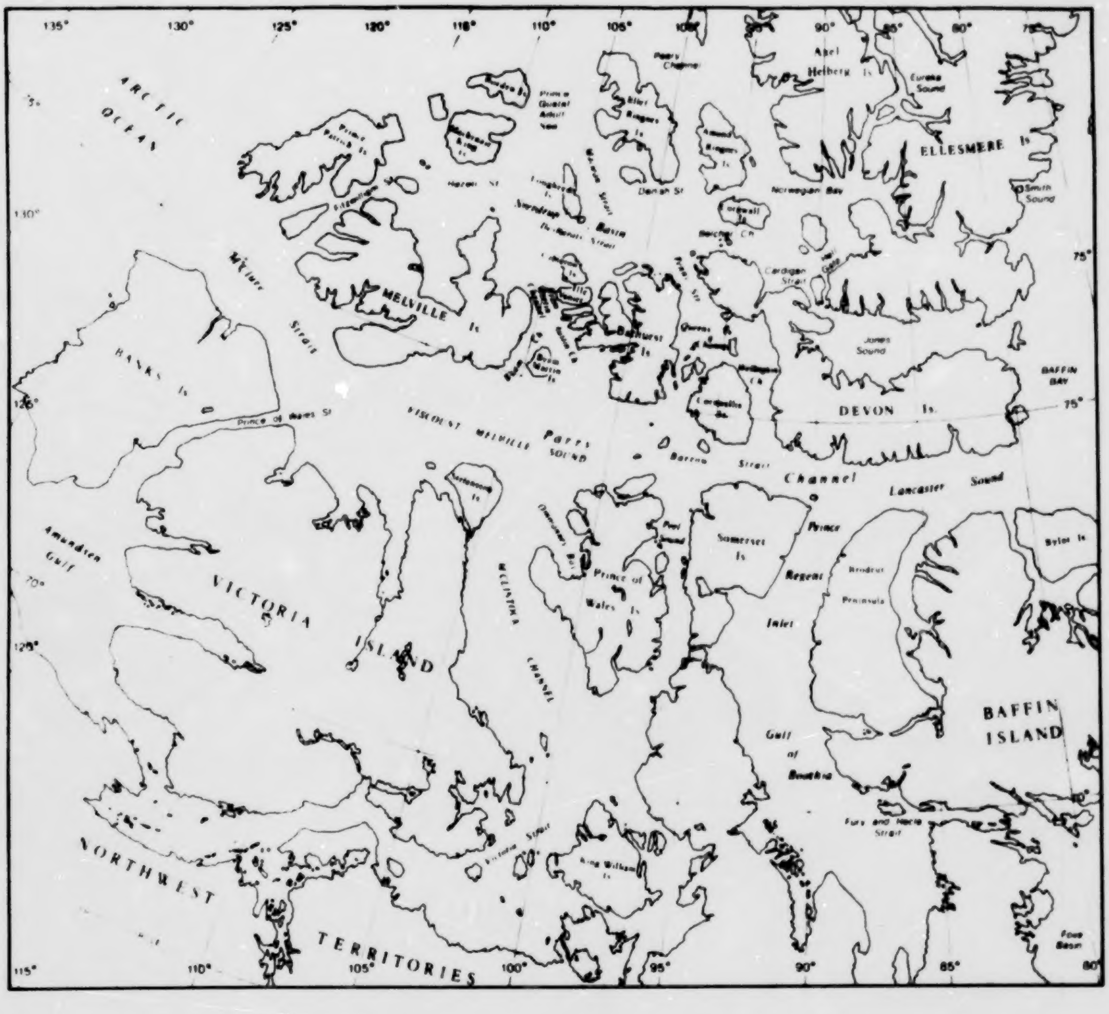
135°
130°
125°
120°
115°
110°
105°
100°
90°
85°
80°
75°
ARCTIC OCEAN
Prince Patrick Is
Axel Heiberg Is
Eureka Sound
ELLESMERE Is
Smith Sound
Norwegian Bay
Ellef Ringnes Is
Amund Ringnes Is
Cornwall Is
Cardigan Strait
Jones Sound
M'Clure Strait
MELVILLE Is
Bathurst Is
Cornwallis Is
DEVON Is
BAFFIN BAY
75°
BANKS Is
Prince of Wales St
VISCOUNT MELVILLE SOUND
Parry
Barrow Strait
Channel
Lancaster Sound
Prince Regent Inlet
Bylot Is
Somerset Is
Peel Sound
Brodeur Peninsula
Amundsen Gulf
70°
VICTORIA ISLAND
M'CLINTOCK CHANNEL
Prince of Wales Is
Gulf of Boothia
BAFFIN ISLAND
Fury and Hecla Strait
Victoria Strait
King William Is
NORTHWEST TERRITORIES
Foxe Basin
115°
110°
105°
100°
95°
90°
85°
80°

Figure 1: A map of the Canadian Arctic Archipelago.

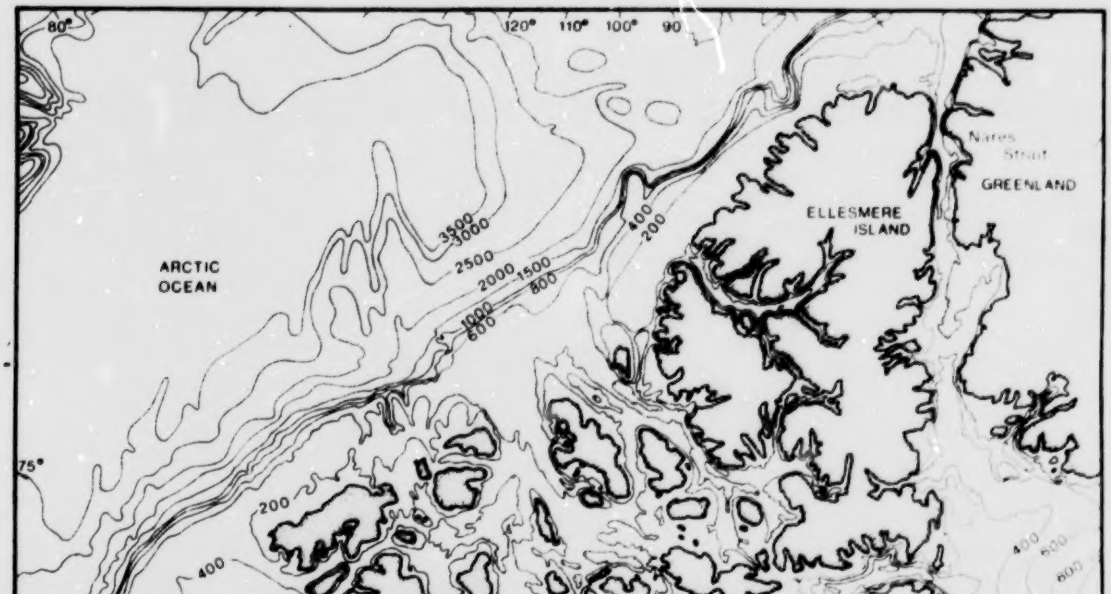
80°
120°
110°
100°
90
Nares Strait
GREENLAND
ELLESMERE ISLAND
ARCTIC OCEAN
3500
3000
2500
2000
1500
1000
800
600
400
200
75°
BATHURST IS
DEVON ISLAND
BAFFIN BAY
BANKS ISLAND
70°N
VICTORIA ISLAND
BAFFIN ISLAND
NORTHWEST TERRITORIES
120°W
110°
100°
90°

Figure 2: The bathymetry of the Canadian Arctic Archipelago, based on the GEBCO map 5-17, published in 1979. Depth contours are displayed at 200 m intervals up to 1000 m. At greater depths, 500 m intervals are used.

Free passage of water through the Archipelago is limited to a maximum depth of about 250 m through Nares Strait. Within the remainder of the region, the next deepest continuous passage occurs at about 105 m in Parry Channel with the limiting obstruction in Barrow Strait.

Exchanges of water through the Queen Elizabeth Islands are curtailed by the presence of relatively shallow sills in the southern channels connecting this area to: (1) Jones Sound, through Hell Gate (sill depth of 110 m) and Cardigan Strait (120 m); (2) to Lancaster Sound by way of Penny Strait-Queens Channel (85 m); (3) to Barrow Strait by way of Penny Strait-Wellington Channel (73 m); (4) to Viscount Melville Sound by means of Byam Channel (100 m), Austin Channel (102 m) and (5) to M'Clure Strait by means of Fitzwilliam Strait (250 m).

Within the central waterways of the Queen Elizabeth Islands, often referred to as the Sverdrup Basin, the limiting depth appears to be about 380 m for north-south exchanges although depressions occur to about 600 m in Prince Gustaf Adolf Sea. Even deeper depressions to about 1000 m occur further to the east in the Nansen Sound-Greely Fiord system although free exchange with the Arctic Ocean to the north is limited to depths of about 475 m. In the latter waterway, exchange to the south with the Sverdrup Basin is restricted to depths of 90 m in Eureka Sound.

South of Parry Channel, the depths are characteristically shallow with most of the area being less than 200 m in depth. However, deeper water of over 400 m is found extending into Amundsen Gulf from the Beaufort Sea and into Prince Regent Inlet from Lancaster Sound and Baffin Bay. In addition, water with depths in excess of 200 m protrudes into M'Clintock Channel from Viscount Melville Sound and M'Clure Strait. Throughout the remainder of the area, mostly the southerly portion bordering the continental mainland, water depths are typically 100 m or less with only a few depressions of over 200 m depth.

2.2 SEA ICE

Ice Climatology

From the onset of ice formation in September until clearing in the following summer, virtually all of the study area is covered by sea-ice in one form or another. The ice cover is a combination of first-year ice, which has formed since the preceding summer and the harder, thicker second or multi-year ice. The average concentration of multi-year ice is highest in the western and northern portions of the Queen Elizabeth Islands, decreasing to the southeastern area where summer clearing is more extensive. Significant quantities of second or multi-year ice are often found in M'Clure Strait, Viscount Melville Sound and M'Clintock Channel. In the remainder of the study area, the presence of multi-year ice is rare.

In most of the study area, the sea-ice consolidates in late autumn or early winter, becoming landfast and immobile. However, in some regions the ice remains mobile throughout the winter and into spring. Areas of such sea-ice mobility are often found in the eastern and western ends of Parry Channel, Prince Regent Inlet, northern Baffin Bay and in western Amundsen Gulf. The location of the ice edges forming the boundary between landfast and mobile sea-ice exhibits considerable year-to-year variability in most of the regions.

For example, in eastern Parry Channel, Marko (1978) has shown that the ice edge location can vary from western Barrow Strait to eastern Lancaster Sound, over a distance of 500 km.

Even in the winter and early spring, certain areas, referred to as polynyas or flaw leads, are found to have open water or be covered with very thin ice. These polynyas tend to recur from one year to another in the same general locations, as shown in Figure 3.

The pattern and extent of sea-ice clearing in the study area is quite variable, but some generalizations can be made. Clearing tends to occur to the east through Lancaster Sound into Baffin Bay and to the west through M'Clure Strait and Amundsen Gulf into the Beaufort Sea. The ice from the Queen Elizabeth Islands generally moves southward through the connecting channels into Parry Channel. Sea-ice from Parry Channel often collects in M'Clintock Channel, Larsen Sound and Victoria Strait under the influence of prevailing northerly winds, with the result that this area stays congested with sea-ice through most of the summer.

In a summer of light ice conditions, complete clearing of sea-ice occurs throughout Baffin Bay, Smith, Jones and Lancaster Sounds, Barrow Strait, Prince Regent Inlet, Peel Sound, Wellington and Queens Channels, Norwegian Bay, Eureka Sound, Amundsen Gulf, Prince of Wales Strait and Dolphin and Union Strait, Coronation and Queen Maud Gulfs. The remainder of the study area has varying degrees of ice cover with highest concentrations of more than seven-eighths in the Queen Elizabeth Islands and west of Axel Heiberg Island. In M'Clure Strait, Viscount Melville Sound and M'Clintock Channel, the sea-ice is generally limited to two-eighths concentration or less, but some subareas remain with concentrations up to five-eighths.

In a summer of heavy ice conditions, only northern and eastern Baffin Bay, Lancaster Sound, and portions of Barrow Strait, Prince Regent Inlet, Wellington Channel, Peel Sound and Amundsen Gulf are completely free of sea-ice. M'Clure Strait, Viscount Melville Sound and M'Clintock Channel remain covered with unconsolidated ice of greater than seven-eighths concentration. Throughout most of the Queen Elizabeth Islands the sea-ice cover is complete and consolidated; only in the southeastern portion around the Norwegian Bay do any openings and appreciable movement of sea-ice occur.

Ice Conditions of the Previous Summer (1981)

In the summer preceding the springtime data collection period of the present study, sea-ice conditions were generally light. A composite figure of maximum sea-ice clearing was assembled from the weekly AES Ice Central charts and NOAA satellite imagery (Figure 4). By the middle of September, extensive clearing had occurred through all of the eastern and southern channels of the study area from Nansen Sound in the north through the Norwegian Bay, Barrow Strait and Lancaster Sound, Prince Regent Inlet, Peel Sound, through to Queen Maud and Coronation Gulfs, Dolphin and Union Strait and Amundsen Gulf in the south and west. The northern and western channels of the Queen Elizabeth Islands and the Gulf of Boothia-Committee Bay area never cleared of sea-ice but the ice was mobile and clearing did occur in small subareas. In M'Clure Strait, Viscount Melville Sound and M'Clintock Channel, maximum clearing took place later in the season, from mid-September to mid-October. Extensive areas of open water appeared in all of these areas throughout this period, with the

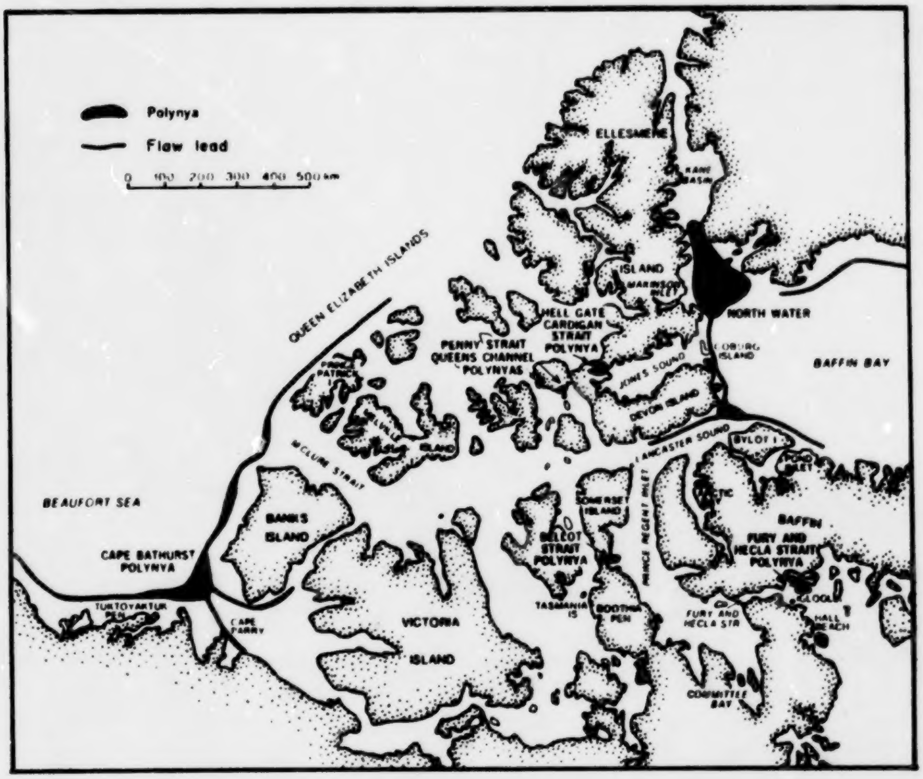
Polynya
Flaw lead
0 100 200 300 400 500 km
QUEEN ELIZABETH ISLANDS
ELLESMERE
KANE BASIN
ISLAND
MAKINSON INLET
NORTH WATER
HELL GATE CARDIGAN STRAIT POLYNYA
PENNY STRAIT QUEENS CHANNEL POLYNYAS
PRINCE PATRICK I
COBURG ISLAND
BAFFIN BAY
JONES SOUND
DEVON ISLAND
MELVILLE ISLAND
M'CLURE STRAIT
LANCASTER SOUND
BYLOT I
POND INLET
BEAUFORT SEA
BANKS ISLAND
SOMERSET ISLAND
PRINCE REGENT INLET
BAFFIN
BELLOT STRAIT POLYNYA
FURY AND HECLA STRAIT POLYNYA
CAPE BATHURST POLYNYA
TUKTOYAKTUK PEN
CAPE PARRY
VICTORIA ISLAND
TASMANIA IS
BOOTHIA PEN
FURY AND HECLA STR
IGLOOLIK
HALL BEACH
COMMITTEE BAY

Figure 3: Locations of recurring polynyas and flaw leads in the Canadian Arctic Archipelago (from Stirling and Cleator, 1981).

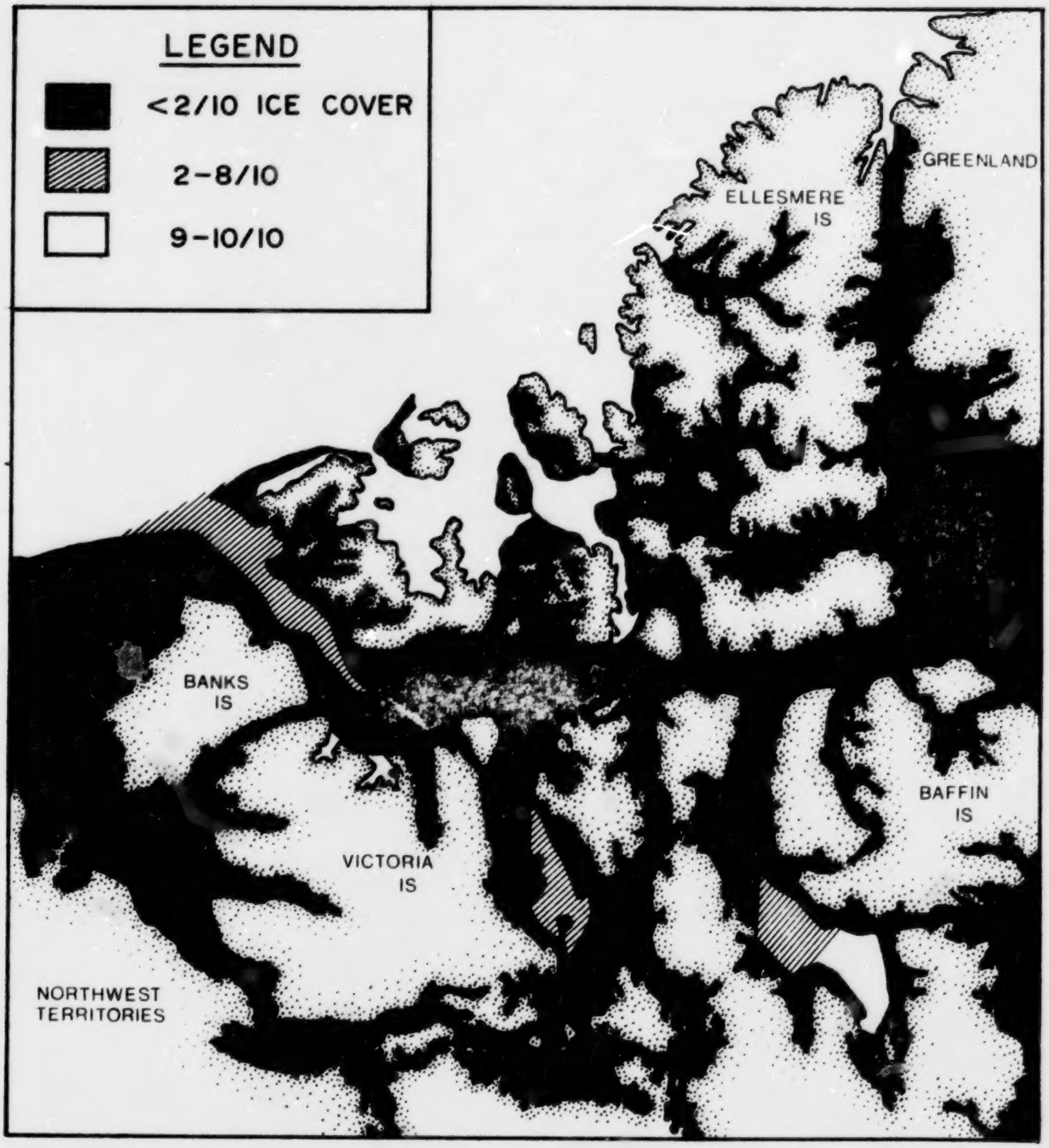
LEGEND
<2/10 ICE COVER
2-8/10
9-10/10
GREENLAND
ELLESMERE IS
BANKS IS
VICTORIA IS
BAFFIN IS
NORTHWEST TERRITORIES

Figure 4: Minimum ice cover during the period August 15-October 15, 1981, based on NOAA satellite imagery and Ice Central charts. Note that the ice conditions did not occur simultaneously.

remainder of the surface area being covered by large, scattered ice floes having total concentrations of about three- to nine-tenths. Generally higher sea-ice concentrations tended to occur in northern M'Clure Strait and western M'Clintock Channel.

Winter Ice Conditions Prior To Field Studies

With the onset of new ice formation in the autumn, the sea-ice cover became complete and began to consolidate following the usual seasonal patterns. An examination of satellite imagery reveals that consolidation of the ice cover had occurred throughout most of the study area by early January. Areas that remained unconsolidated at this time included M'Clure Strait, Amundsen Gulf and the Barrow Strait-Prince Regent Inlet-Lancaster Sound area. During the month of January, the ice in both M'Clure Strait and Amundsen Gulf stabilized and by the end of the month, the sea-ice appeared to be largely consolidated in these regions. Very little second or multi-year ice was in evidence.

The ice in Barrow Strait remained in motion until mid-February. Prior to this time, an ice edge had formed in the vicinity of Lawther Island, to the west of which the ice was consolidated. This feature was clearly present on February 13, but on February 15 a new ice edge appeared across western Lancaster Sound north of Brodeur Peninsula. Within the next ten days, the ice to the east of this edge appeared to travel eastward past Admiralty Inlet, leaving open water which quickly refroze. The mean eastward motion of the ice exiting Lancaster Sound was estimated as approximately 8 km/d or 9 cm/s from February 15 to February 26. During the same period, the ice in Barrow Strait and northern Prince Regent Inlet became landfast. However, to the south of 73°N in Prince Regent Inlet and the Gulf of Boothia, the ice remained unconsolidated as indicated by the complex pattern of leads present in this area.

Ice Observations During Field Studies

During the course of the CTD survey from March 19 to April 6, visual observations were made as to ice conditions. As well, the ice thickness was measured at each CTD station. (Note that the ice thickness determined in this way would not necessarily be a representative mean value for an area, since aircraft landings were only attempted on relatively smooth first-year ice.) A summary of the ice information is presented in Figure 5.

Ice thicknesses were greatest at stations in the Queen Elizabeth Islands (average thickness of 2.0 m) and line C across Byam Martin Channel (1.9 m). In this region much of the surface was covered with large second and multi-year ice floes. Because the surfaces were uneven from rounded ridges, landings could not be attempted. It was not possible to find suitable landing sites for planned stations in Danish Strait and Hazen Strait; however, relatively smooth first-year ice between the large old floes provided adequate landing sites on either side of Lougheed Island. Similar ice conditions were encountered in Byam Martin Channel, but again enough smooth first-year ice was available to complete all planned stations in this area.

For the stations across Penny Strait, the ice thickness was much less, ranging from 0.9 to 1.0 m. As noted above, this is an area of occasional polynya formation. Here the ice consisted entirely of first-year floes, with

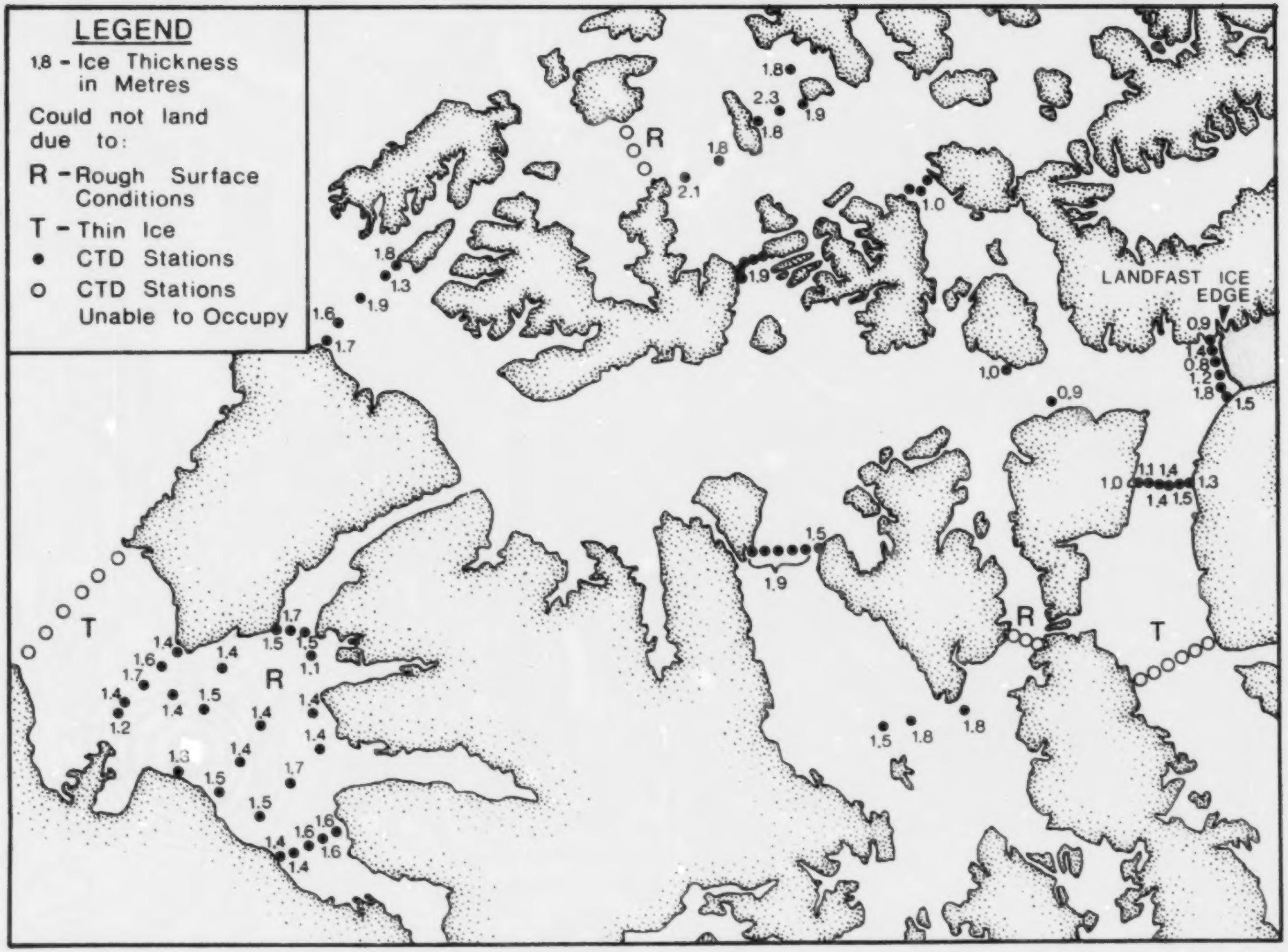
LEGEND
1.8 - Ice Thickness in Metres
Could not land due to:
R - Rough Surface Conditions
T - Thin Ice
● CTD Stations
○ CTD Stations Unable to Occupy
LANDFAST ICE EDGE
R
T
R
T
R
1.8
2.3
1.9
1.8
1.8
2.1
1.0
1.9
1.8
1.3
1.9
1.6
1.7
1.0
0.9
0.9
1.4
0.8
1.2
1.8
1.5
1.0
1.1
1.4
1.3
1.4
1.5
1.5
1.9
1.7
1.5
1.5
1.1
1.4
1.6
1.4
1.7
1.4
1.5
1.4
1.2
1.4
1.4
1.4
1.4
1.3
1.5
1.7
1.5
1.4
1.6
1.6
1.6
1.4
1.5
1.8
1.8

Figure 5: A summary of ice observations collected during the field work from March 19 to April 6, 1982.

many ridges of variable dimensions. However, sufficient landing sites were found to complete all four planned stations, although some stations had to be moved by 3 to 4 km from their designated locations.

In M'Clure Strait, the sea-ice cover was almost entirely composed of first-year ice with a few scattered floes of multi-year ice observed over the southern side of the transect. Difficulty was experienced in finding suitable landing sites due to the heavy degree of ridging in the sea-ice; extra flying time required to find the sites forced cancellation of one of the planned stations on this line. Ice thicknesses were variable ranging from 1.3 to 1.9 m.

The ice conditions varied markedly throughout Amundsen Gulf. At the western entrance to the Gulf, the ice appeared to be thin with many occasional small leads appearing on the surface. Because of this, it was not possible to occupy the planned line of stations from Cape Kellett to Cape Bathurst. Further east, the ice was more substantial with thicknesses ranging from 1.2 to 1.7 m. Although most of the ice cover featured many small ridges, the area contained many relatively smooth floes of about 200 m in diameter on which landings could be executed. However, problems were encountered in northern Amundsen Gulf in the approaches to Prince of Wales Strait, due to a hard-packed snow cover lying as irregular drifts with estimated thickness of 0.3 to 1.0 m. An attempted landing on such snow indicated it was too hard to permit safe landings and takeoffs. As a result of these conditions, no oceanographic stations were occupied in this area and only three of the four planned stations across the entrance to Prince of Wales Strait were completed.

In M'Clintock Channel, the conditions across the northern line consisted of large first-year ice cover with scattered second or multi-year ice floes on the western side. The ice thickness ranged from 1.8 to 2.0 m at all stations but the easternmost, where the ice thickness was 1.5 m. Over the southern end of the Channel, only first-year ice was encountered. Here, hard-packed snow drifts made location of suitable landing sites difficult. The difficulties with snow drifts worsened in Franklin Strait which was uniformly covered with drifts of an estimated average height of 0.3 to 0.5 m. No landings were possible in the Strait.

Southern Prince Regent Inlet and the northern part of the Gulf of Boothia was covered by unconsolidated first-year ice with extensive open water and recently frozen-over leads. Where the ice did not appear excessively thin, it was heavily ridged, apparently due to the mobility of the ice cover. As a result, the stations planned for this area were abandoned in favor of locations north of 73°N in Prince Regent Inlet where the ice cover was consolidated. Here the ice was relatively smooth on the eastern side but became thinner, more heavily ridged and covered with higher snow drifts on the western half of the Inlet. In fact, the westernmost station had to be shifted 3 km offshore from its planned location due to the presence of thinly frozen-over leads among heavily ridged, first-year ice.

Most of the stations occupied in western Lancaster Sound were located within 3 to 6 km of the location of the landfast ice edge, as inferred from satellite imagery. The surface ice conditions were for the most part rough, with many ridges and rubble fields, typically 3 to 5 m high and occasionally up to 10 m in height. However, occasional small (100 to 200 m) patches of relatively smooth ice served as landing sites. Thin, recently frozen leads were observed in the ice cover within 10 km of Brodeur Peninsula.

3. PREVIOUS OCEANOGRAPHIC STUDIES

Little was known of the physical oceanography of the Canadian Arctic Archipelago until the 1950's. Prior to this, oceanographic surveys of the Canadian Arctic had been carried out in Hudson Bay, Davis Strait and Baffin Bay (Dunbar, 1951) but virtually no measurements had been taken in the Archipelago. Following the second world war, navy and coast guard icebreakers journeyed to the area during the summer navigation season. On some of these cruises, from the late 1940's to the 1960's, oceanographic bottle stations were carried out, forming the basis of the first regional oceanographic studies.

By the early 1960's, the regional water mass characteristics had been described (Hachey, Lauzier and Bailey, 1956; Bailey, 1957; Collin, 1963), showing that below 150 m depth, the waters differed significantly from west to east due to the presence of sills within the Arctic Islands limiting free exchange between the Arctic Ocean basin and Baffin Bay. Estimates of the summer circulation indicated that the dominant surface and near-surface flow through the Archipelago was to the south and east carrying water from the Arctic Ocean to Baffin Bay (Collin, 1963; Collin and Dunbar, 1964). The net volume transport into Baffin Bay from Lancaster, Jones and Smith Sounds was estimated as $0.7\text{-}1.7 \times 10^6$ m^3/s. Muench (1971) later revised this figure to 2.1×10^6 m^3/s on the basis of additional data, with one-half of the inflow occurring through Lancaster Sound. Volume transport through the Arctic Archipelago accounts for about 20% of the total outflow of water from the Arctic to Atlantic Ocean (Aagaard and Greisman, 1975).

In the 1960's, the first winter and spring oceanographic data were collected using aircraft landing on the sea-ice (Collin, 1961) or surface vehicles (Herlinveaux, 1961; Hattersley-Smith and Serson, 1966). During both the 1960's and 1970's, new instrumentation and techniques were developed and adapted for the Arctic, which greatly improved the quantity and quality of oceanographic data (Lewis, 1980). Self-recording current meters and water level instruments, capable of long-term data collection were first introduced and the continuous profiling CTD (Conductivity Temperature Depth) recorder became available.

Oceanographic studies carried out in the 1960's and 1970's tended to be more intensive but concentrated on areas of small geographical extent within the Canadian Archipelago. Detailed studies were carried out in the Greely Fiord area (Ford and Hattersley-Smith, 1965; Lake and Walker, 1973; Lake and Walker, 1976), Baffin Bay and Lancaster Sound (Muench, 1971; Fissel and Wilton, 1978; Fissel, Lemon and Birch, 1982), Fury and Hecla Strait (Sadler, Serson and Chow, 1979), connecting passages between the Queen Elizabeth Islands and Parry Channel (Peck, 1977; Greisman and Lake, 1978), Viscount Melville Sound and Barrow Strait (Fissel and Marko, 1978; Prinsenberg, 1978;

Peck, 1980a; Lemon, Wilson and Cuypers, 1981) and in the channels of the Queen Elizabeth Islands (Peck, 1980b; Peck, 1980c; Van Ieperen, 1981). Much of the data in these studies has yet to be fully analyzed and no concerted effort has been made to integrate the individual data sets so as to provide an improved description of the regional oceanography.

4. DATA COLLECTION AND PROCESSING METHODS

4.1 DATA COLLECTION

All data collection was carried out from a DHC-6 de Havilland Twin Otter aircraft, C-GKBO, chartered from Kenn Borek Air Ltd. A total of 70 CTD profiles were obtained at the locations shown in Figure 6, from March 19 to April 6, 1982. Several of the stations had to be relocated from their originally planned positions due to the absence of suitable ice conditions for aircraft landings, as discussed in Section 2.2.

In addition to the CTD data, inorganic micronutrient samples were obtained at two stations on each daily transect. The samples were collected at 5 m and either 50 or 75 m depth, and occasionally, at greater depths. Once on each daily transect, a salinity sample was collected to check the CTD derived salinity, and at least once for every three days of operation, in situ thermistors were used to check the CTD temperature.

Station positions were determined using the GNS-500 VLF/Omega navigation system on the aircraft. Readings of indicated positions at known locations suggested that the positional accuracy was approximately 2 km or better.

The scientific equipment was distributed throughout the aircraft with the CTD winch and a gasoline-powered generator located at the rear opposite the main port-side entry door. The CTD control unit and computer was located forward behind the cockpit. When on station, the arms of the winch were moved forward to protrude through the door opening and the block attached. The CTD probe was then lowered through an ice hole drilled immediately below the main doors.

CTD Instrument System

The data were collected using a Guildline Model 8706 digital CTD probe and Model 87102 control unit. The probe carried three sensors: a thermometer, a pressure transducer and a conductivity cell. It transmits data to the surface control unit in digital form along a single-conductor cable. The same cable is used to lower the instrument. The manufacturer's specifications for the sensors and their associated electronics are shown in Table 1.

The instrument samples 25 times per second. The CTD was normally lowered at approximately 1.5 m/s which translates to a spatial sampling interval of about 6 cm.

In addition to the measurement sensors, the CTD probe was equipped with touchdown and bottle-trip reed switches. A lead weight suspended beneath the probe by 5 or 10 m was connected through a nylon line to the touchdown switch. When the lead weight reached the bottom, the touchdown switch would be activated providing a warning for the winch operator. A Knudsen reversing

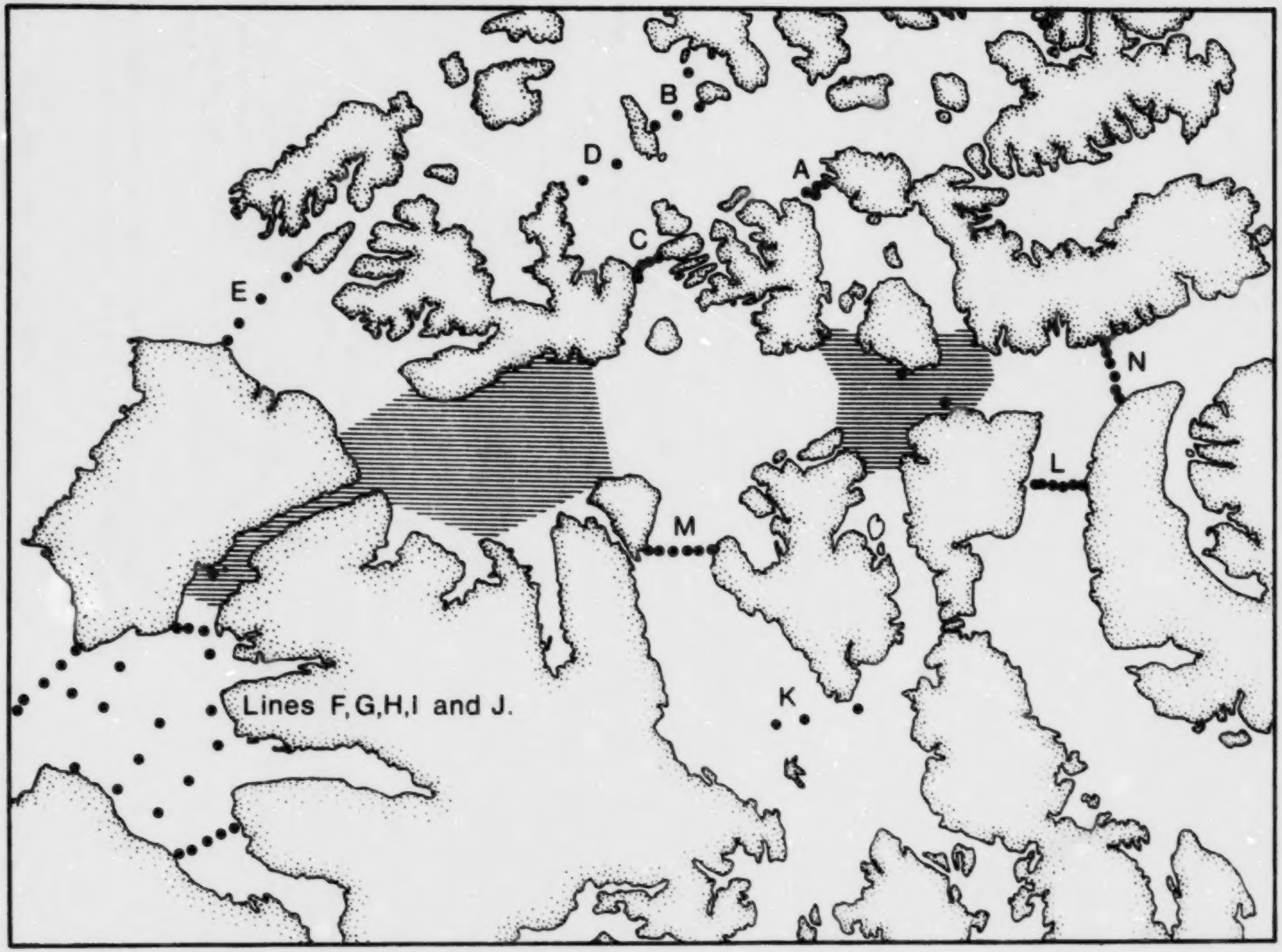

Figure 6: Locations of oceanographic stations occupied between March 19 and April 6, 1982 in the Canadian Arctic Archipelago. The shaded regions indicate the areas of concurrent physical oceanographic studies carried out by the Institute of Ocean Sciences in Prince of Wales Strait and Viscount Melville Sound and in Barrow Strait by the Bayfield Marine Laboratory.

bottle, mounted above the CTD probe, was connected to the bottle-trip switch to indicate when the bottle had tripped during the descent of the probe in response to a dropped messenger. Both of the switch values were recorded onto the digital data tape, along with the pressure, temperature and conductivity ratio data.

Table 1

Specifications for Guildline CTD

Function	Range	Accuracy	Resolution	Stability	Response Time
C*	100 ppm to 40	±0.005	±0.001	±0.002/6 mos.	<50 ms
T	-2°C to 30°C	±0.005°C	±0.0005°C	±0.005°C/6 mos. ±0.002°C/30 days	<50 ms
P	to 1500 dbar	±0.15%F.S.	±0.01%F.S.		<50 ms

*Specifications for conductivity are given as equivalent salinities.

A Hewlett-Packard 9825 computer was used to monitor the CTD data as the probe was lowered. The computer calculated the fall speed as the probe descended so that the fall rate could be kept near 1.5 m/s, in order that the response characteristics of the conductivity and temperature transducers would be matched (Perkin and Lewis, 1982). In addition, the time at which to release the bottle messenger was indicated for a specified bottle depth. The computer also provided a real-time display and vertical profile plot of the temperature and salinity to monitor the quality of the data.

CTD Station Procedures

Once the aircraft had landed, the gasoline-powered generator was started. A nine-inch hole was drilled using an ice auger turned by a one-inch shaft electric drill. After all snow and ice fragments had been cleared from the hole, the thickness was measured and a depth sounding taken. The CTD probe was lowered to a depth of 15 m as determined by a previously measured mark on the winch cable. Power was then applied to the probe and the output was monitored through the computer. Successive readings were noted until the instrument stabilized, usually requiring about ten minutes. The probe was then raised to within 4 to 5 m of the surface and the tape recorder was started. The probe was then lowered at a speed of 1.5 m/s until within 30 m of the bottom. At this point, the descent rate of the probe was slowed to about 1.0 m/s, and then stopped when the touchdown switch was activated. The tape recorder was stopped and then the probe was pulled back to the surface. Once the probe was secured within the plane, the conductivity cell was filled with a methyl alcohol solution to prevent seawater from freezing within the cell. Methyl hydrate was also applied to the temperature sensor coil to keep ice from forming on its surface.

If a salinity sample was required at the station, it was obtained with the Knudsen reversing bottle mounted immediately above the CTD probe. The bottle was tripped as the probe descended to provide a simultaneous salinity value for calibration of the CTD probe. From each Knudsen bottle, three samples were drawn into 150 ml glass bottles.

Every effort was made to prevent the salinity samples from freezing. Once the samples were drawn, they were stored in an insulated box and kept in heated surroundings. However, on cold (-35 to -40°C), windy days, some freezing of the seawater did occur in the nozzle of the Knudsen bottle prior to drawing of the samples.

Temperature calibration data were obtained by attaching a pair of wire thermistors adjacent to the temperature sensor of the probe. The probe with attached thermistors was lowered as far as the thermistor cables permitted, about 8 m below the surface. The thermistors were connected to an electrical bridge circuit, which was used to determine the temperature from each thermistor. This procedure was carried out prior to the CTD profile.

Inorganic Nutrient Sampling

At stations where nutrient samples were collected, the Knudsen bottle was set and then lowered to the desired depth, according to measured marks on the winch wire, following the CTD profile. The bottle was tripped and returned to the surface. At each sampling depth, four samples were collected: two were drawn into glass tubes and two into plastic tubes. Each tube, having a volume of 20 ml, was rinsed three times prior to drawing the sample. The samples were then allowed to freeze immediately and thereafter were stored in a cooler in the aft baggage compartment of the aircraft.

Following the field work, the samples were analyzed on a Technicon II auto-analyzer by Seakem Oceanography Ltd., Victoria, B.C. In the course of shipping from the Arctic to Victoria, some of the samples were found to have thawed to varying degrees. These samples are identified in the data listings.

4.2 CALIBRATION

Calibration data for the pressure sensor were obtained at each CTD station by lowering the instrument a known distance from the surface (15 m) and noting the indicated pressure. The difference between 15 dbar and the CTD pressure was used as the pressure offset for the CTD data obtained at the station. Data for calibrating the CTD temperature and conductivity ratio output were collected in the form of near-surface comparisons with thermistors and deep-water salinity samples.

Intercomparisons were carried out separately between the CTD system of the present study and those being used by the Frozen Sea Research Group (FSRG) and the Bayfield Laboratory for Marine Sciences and Surveys. The FSRG intercomparison was carried out in Prince of Wales Strait on April 2 while the second intercomparison took place on April 4 in Barrow Strait. In both cases, the CTD probes were lowered simultaneously at a separation of approximately 100 m. Bottle samples were collected at both sites to provide salinity calibration data.

The indicated temperature and salinity errors of the CTD system for each calibration value are summarized in Table 2. Note that the temperature errors are given as the difference between the mean thermistor reading and the uncorrected CTD temperature, with the indicated uncertainty reflecting the difference in the two thermistor values. For the salinity errors, the CTD temperature was corrected first, as discussed below before the CTD salinity was computed. The indicated uncertainty in salinity errors corresponds to the scatter of the three salinity samples drawn from each reversing bottle.

Table 2

Summary of CTD calibration comparisons for temperature and salinity. The temperature error is the difference between the mean thermistor reading and the uncorrected CTD temperature reading. The CTD salinity values have been computed using temperature correction values as described in the text.

Date	**Station**	**Depth**	**Temperature Error (mdeg)**	**Depth**	**Salinity Error**
20 March	BL31			92	-0.042±0.014(a)
23 March	B1	7	-6.2±0.9	-	-
25 March	E1	-	-	270	-0.023(b)
29 March	G5	7	-10.4±0.7	-	-
29 March	G2	-	-	327	0.322±0.0005
30 March	I6	-	-	431	0.304±0.001
31 March	H1	-	-	290	0.221±0.005(c)
1 April	J5	6	-15.8±.07	-	-
1 April	J3	-	-	333	0.416±0.001
2 April	F3	6	-22.7±1.2	-	-
4 April	M1	7	-5.0±0.4	-	-
4 April	M2	-	-	144	0.021±0.0015
4 April	M5	-	-	231	0.007±0.001
4 April	BL46	-	-	125	0.010±0.0005
5 April	L6	7	-9.9±0.3	-	-
5 April	L2	-	-	199	0.015±0.003
5 April	L1	7	-10.7±0.2	-	-
6 April	K1	7	-6.8±0.2	-	-

Notes:
(a) Only two salinity samples (33.053 and 33.026) were available.
(b) Only one salinity sample was available.
(c) Based on two of the three salinity samples. The two used were 34.652 and 34.659 while the sample not considered had a value of 34.679.

The calibration comparisons indicate that from March 29 to April 2, inclusive, the salinity errors were much larger than those experienced before or after this period. During this period, when the aircraft was operating in Amundsen Gulf, the temperature errors tended to be larger as well. To determine suitable corrections for these data, special procedures were used as described in Appendix 1.

The five temperature errors determined before March 29 and after April 2 had a mean value ± standard deviation of -7.7 ±2.2 mC°. Since the range of temperature errors, 5.7 mC°, was comparable to the instrument's uniform accuracy of 5 mC°, a temperature offset of 8 mC° was applied to all of the non-Amundsen Gulf CTD data.

The comparisons between bottle and CTD salinity demonstrate that the CTD probe was consistently underestimating the true salinity by 0.014±.005 (mean ± standard deviation; n=4) from April 4-6, inclusive. Prior to March 29, the indicated salinity errors have the opposite sign. However, during this first part of the data collections, temperatures were very cold which resulted in great difficulty in drawing the salinity samples before freezing occurred. In fact, only two sets of salinity calibration data were obtained without obvious signs of freezing and neither of these provide consistent results among the individual samples. Due to the lack of reliable salinity comparisons available before March 29, the corrections for this period were based on the April 4-6 comparisons.

The corrections based on salinity comparisons were applied to the conductivity ratio data. For each salinity data point, the CTD pressure and temperature values were both corrected first. Then the appropriate corrective ratio was determined which, when multiplied by the raw value of conductivity ratio, resulted in a conductivity ratio that together with the corrected temperature and pressure data combined to produce a salinity in agreement with the bottle salinity value. The average of these corrected factors, 0.99965±0.00012 (n=4), was then used as the conductivity ratio correction factor for all data obtained outside of Amundsen Gulf.

4.3 DATA PROCESSING

In processing the CTD data, as part of applying the calibration corrections described in Section 4.2 and Appendix 1, other corrections were applied to the data. The CTD probe temperature and conductivity sensors have different response times to variations within the water column. To compensate for these changes, which vary with the fall speed of the probe, an algorithm was applied to the raw temperature and salinity data (Perkin and Lewis, 1982). For this purpose, the fall speed was computed as a moving average, over 32 successive sequences. Those data points with fall speeds of 0.3 m/s or less were discarded. In addition, a correction was applied to the conductivity ratio to compensate for changes resulting from geometrical distortions of the conductivity cell due to the differing ambient pressure and temperature during the CTD profiles (Bennett, 1976).

Salinity was computed using the Practical Salinity Scale 1978 (Lewis, 1981) and, in accordance with the convention of the new scale, salinity values are presented as dimensionless numbers. It should be noted that the Practical Salinity values are approximately 1000 times the values of the salinity of the same samples of seawater obtained on the previous scales. For example, a sample of seawater having a salinity of 0.03512 (i.e. $35.12^{o}/oo$) will have a practical salinity of 35.12. (In this report, where comparisons have been made with historical data derived using previous salinity scales, the conversion values of Lewis and Perkin (1981) have been used to determine the magnitude of the changes under the Practical Scale 1978.)

The surface freezing point temperatures were computed according to the new UNESCO definition (Millero, 1978). Density is presented in the form of reduced density:

$$\mu = (\text{density} -1) \times 10^3$$

based on UNESCO Equation of State of Seawater (Millero and Poisson, 1981). For this report, the reduced densities are computed for pressures of one standard atmosphere rather than in situ pressures, often referred to as sigma-t values. The units of reduced density are kg/m^3.

Other derived quantities used in this study are dynamic height anomaly and sound speed. The dynamic height anomaly was computed as the pressure integral of specific volume anomaly (Millero et al., 1980) from the surface (Pond and Pickard, 1978). The values are given in units of dynamic metres, where 1 dyn. m = 10 m^2/s^2 = 10 J/kg. Sound speed was calculated by means of the algorithm of Wilson (1960) with units of m/s.

A plot and listing of the CTD data are provided for each station in Appendix 2. The plots display vertical profiles of temperature, salinity and sigma-t. In addition, surface freezing point temperatures are plotted at standard oceanographic pressures (5, 7, 10, 15, 20, 30, 50, 75, 100, 125, 150, 200, 225, 250, 300, 400, 500 dbar). The CTD data are displayed in the plots to a resolution of 0.15 dbar.

The corrected CTD data, along with the derived quantities sigma-t, dynamic height anomaly and sound speed, are provided at the lowest acceptable pressure, then at 1 dbar intervals to 25 dbar, 2.5 dbar intervals to 50 dbar, 5 dbar to 200 dbar, 10 dbar to 400 dbar, 25 dbar to the greatest pressure value. Each listed value is computed as a linear interpolation between the two data sets at adjoining pressures, where adjacent pressures are separated by about 6 cm.

5. RESULTS

5.1 THE WATER MASSES OF ADJOINING REGIONS

The water mass characteristics of the study area are strongly influenced by those of the two deeper adjoining areas, the Arctic Ocean and Baffin Bay. In both of these water bodies, three water masses are present: Arctic (or Surface) Water to depths of about 200 m, Atlantic Water to depths of about 900 m and Bottom Water beneath this level. The latter water mass is of no direct interest as the study area is not connected to the adjoining regions at depths in excess of 500 m.

To examine the water mass characteristics of the adjoining areas, temperature and salinity profile data were assembled from previous studies having locations shown in Figure 7. Information as to the source of the data and particular stations used is provided in Table 3. A few typical vertical profiles of temperature and salinity are presented in Figure 8 for widely separated locations. Temperature-Salinity (TS) diagrams were prepared for adjoining areas of the Arctic Ocean (Figure 9) and for Baffin Bay (Figure 10).

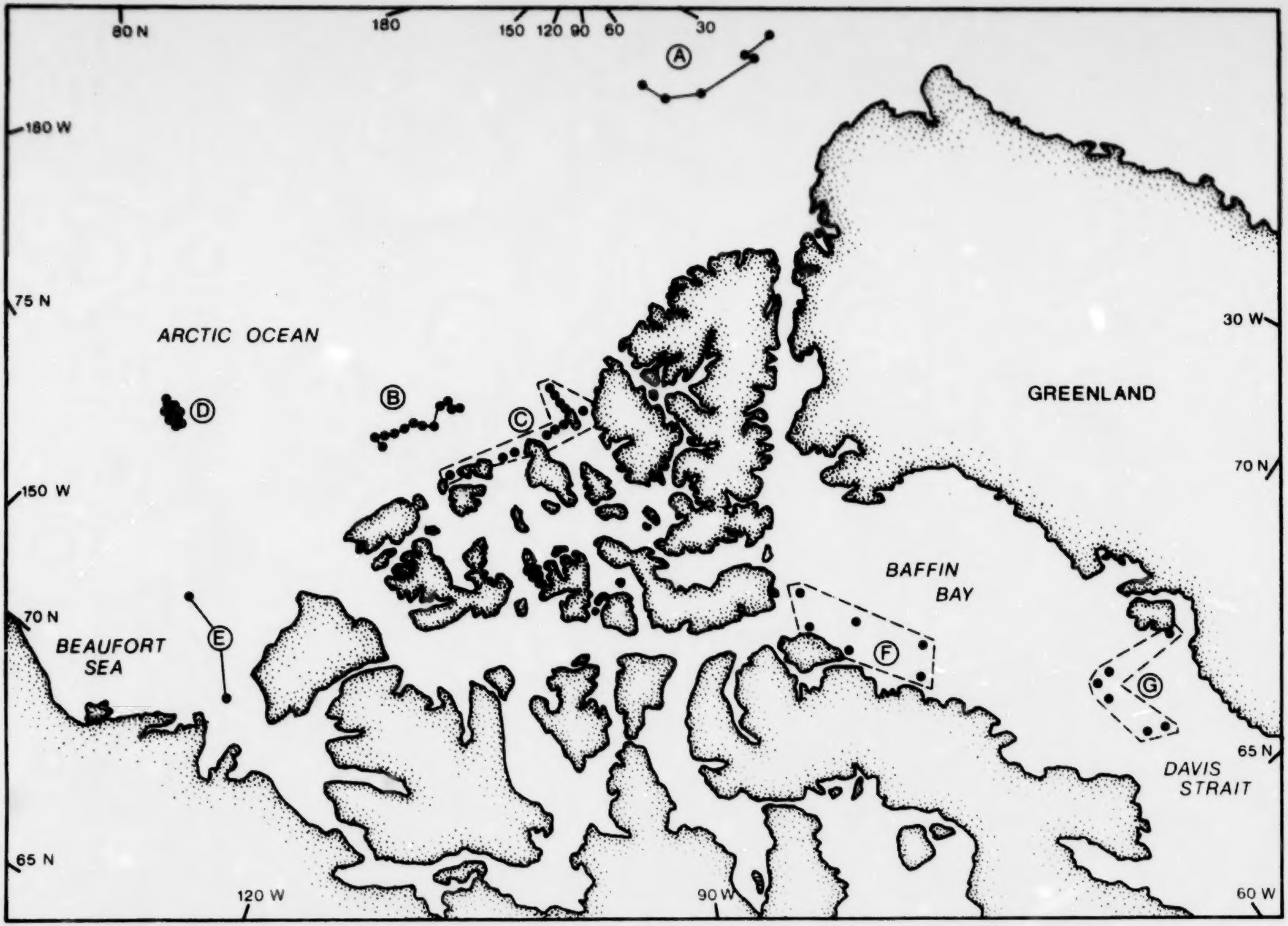
80 N
180
150
120
90
60
30
Ⓐ
180 W
75 N
ARCTIC OCEAN
Ⓑ
Ⓒ
Ⓓ
GREENLAND
30 W
70 N
150 W
BAFFIN
BAY
70 N
BEAUFORT
SEA
Ⓔ
Ⓕ
Ⓖ
65 N
DAVIS
STRAIT
65 N
120 W
90 W
60 W

Figure 7: Measurement locations of historical data used in this study. Data sources for the indicated locations, A to G inclusive, are given in Table 3.

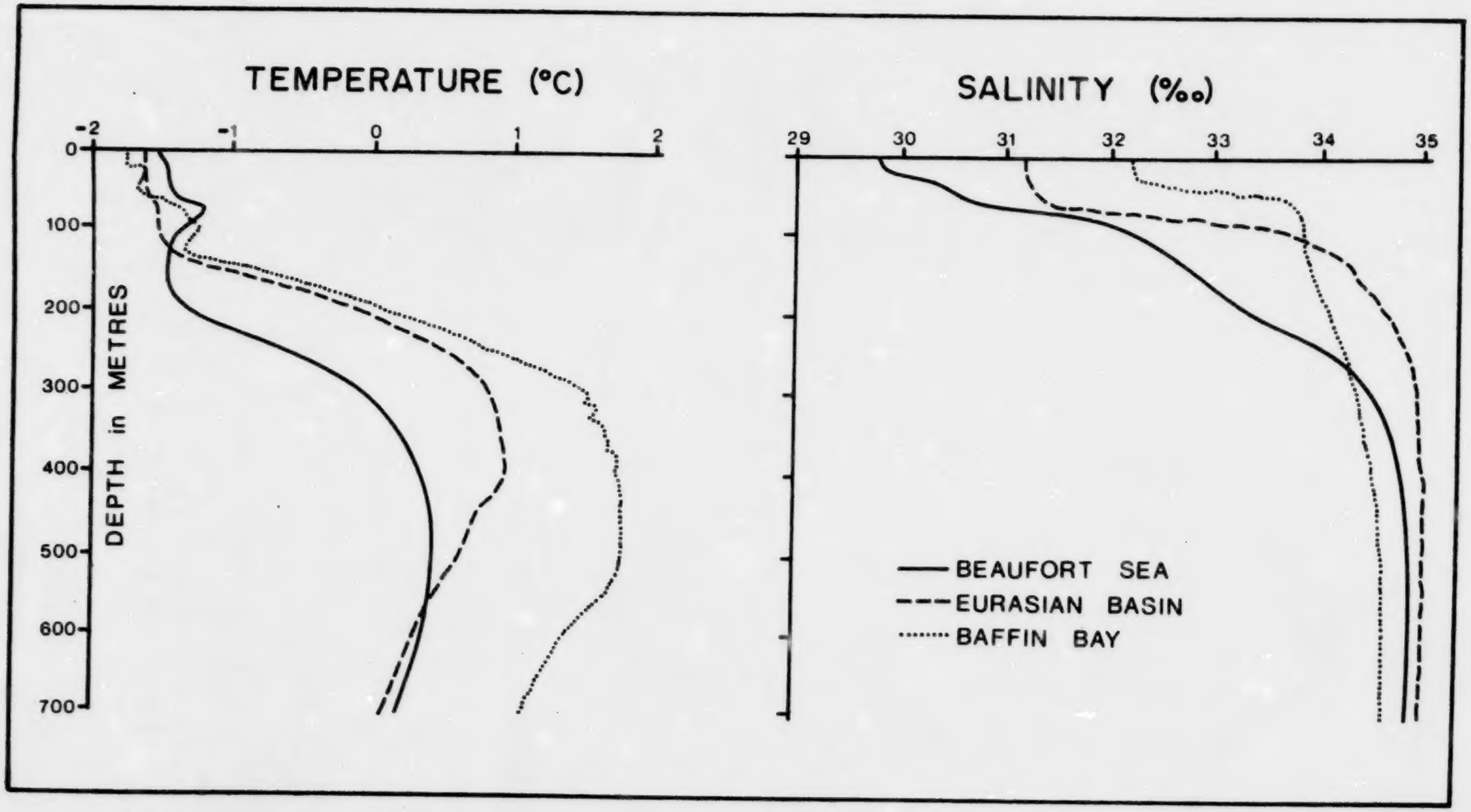

Figure 8: Typical vertical profiles of temperature and salinity in the Canada Basin (Beaufort Sea), Eurasian Basin and Baffin Bay.

Table 3

The data sources used in compiling the temperature-salinity diagrams of Figures 9 and 10. Stations from which data were used to display typical vertical profiles of temperature and salinity are indicated by an *. The locations of the stations for each region are mapped in Figure 7.

Region	Platform	Stations	Time of Measurement	Source
A	ARLIS III	1, 25, 55, 85, 109*, 138, 171	Feb. 10- Aug. 13,1964	Tripp and Kusunoki (1967)
B	T-3	2, 3, 4, 5, 7, 8, 9, 10, 11, 12, 12, 15, 17, 19	May 29- Sept. 16,1958	Collin (1959)
C	Sea-Ice	4, 5, 6, 7, 9, 10, 12, 14, 15, 16, 17	Apr. 28- May 31,1960	Collin (1961)
D	AIDJEX	Big Bear	Apr. 11-30, 1975	Manley (1981)
		Snowbird*	July 4, 1975	
E	Sea-Ice	6	Nov.29,1979	Melling (personal communication)
		10	Nov.25,1979	
F	M.V. Theron	D1, D4, E4*, G1, G2, G4, K2, K4	July 24- Oct. 4,1982	Lemon (1980)
G	USCGC Eastwind	13, 18, 19, 21, 23, 24	July 30- Aug. 4,1982	Muench et al. (1971)

Arctic Water - Variable Upper Zone

The upper few tens of metres of the water column, hereafter referred to as the upper zone, show marked variability in temperature and salinity throughout the study area and adjoining regions. Salinities can range from 27 to 30 in areas close to freshwater sources (Mackenzie River, Bering Strait) up to a range of 33 to 34. Temperatures can vary from the freezing point value beneath local forming ice, up to several degrees in summer open-water conditions. This variability results, in large part, from the differing types and magnitudes of local vertical exchanges of heat and salt, which depend on a wide variety of surface processes including freshwater inputs, solar radiation, latent and sensible heat transfers, and the concentration of salt resulting in an increase of density due to freezing of ice. In most areas, the single most important determining factor is the recent history of the ice cover characteristics.

Arctic Water - Pacific Summer Layer

A temperature maximum is present in some locations typically at depths of 50 m. In the Canada Basin, this temperature maximum is attributed to the injection of relatively warm summer water from the Bering Sea (Coachman and Barnes, 1961). This layer, referred to as Pacific summer water (Manley, 1981), is slowly advected northward into the Canada Basin under the influence of the Beaufort Gyre, gradually losing its identifying characteristics through lateral and vertical diffusion of heat, to the point where it is not apparent in the Eurasian Basin. Its characteristics are considerably weakened in the area to the north of the Canadian Archipelago (Coachman and Barnes, 1961). The outer edge of the continental shelf off Alaska, has been suggested as another route for transporting Pacific summer water eastward along the southern edge of the Canada Basin (Mountain, 1974; Aagaard, 1981).

From the historical data surveyed, Pacific summer water occurs at offshore locations in the Beaufort Sea (areas D and E of Figure 7), appearing as a temperature maximum of -1.0 to -1.3°C at salinities of 31.5 to 32.3 (Figure 9). However, off the continental shelf of the Canadian Arctic Archipelago, (area B, Figure 7) the temperature maximum was not evident at these same salinities; rather, temperatures are near the freezing point to salinities of 32.0-32.2 and then increase to values of -1.35±0.10 over salinities of up to 33.8 where the thermocline to Atlantic Water begins. Much the same pattern is observed on the continental shelf itself (area C of Figure 7), although a weak maximum, with temperatures of up to -1.3°C, was evident at some of the stations, occurring with salinities of approximately 32.4. Given the higher salinity associated with this temperature maximum, it seems quite possible that it may not represent Pacific summer water, but instead previous heating from the surface during ice-free conditions.

In Baffin Bay, TS characteristics suggest that Pacific summer water may not be present (Figure 10). A temperature maximum is observed intermittently in western Baffin Bay and Lancaster Sound over salinities of 32.0 to 33.2 at depths of 50 to 100 m. However, this feature can be explained by local heating of the ice-free waters of northern Baffin Bay over extended periods in late spring and summer, which subsequently is advected into Lancaster Sound and western Baffin Bay underlying the colder, fresher Arctic Water originating in the Arctic Archipelago (Muench, 1971).

Arctic Water - Cold Halocline Layer

The remainder of the Arctic Water is characterized by uniformly cold water (within a few tenths of a degree of the freezing point temperature) along with increasing salinities and below this, increasing temperature and salinities in the transition from Arctic to Atlantic Waters. Aagaard, Coachman and Carmack (1981) argue that the cold upper halocline layer of the Arctic Ocean is maintained by large-scale lateral advection from the adjoining continental shelf where dense and saline shelf water is produced during freezing. The very large continental shelves north of Europe and Asia are proposed as source regions for the Eurasian Basin while the Chukchi and northern Bering Seas and, possibly, the region north of the Canadian Arctic Archipelago may provide the required water types for the Canada Basin. Melling and Lewis (1982) present evidence that this cold halocline water could be generated over the Canadian Beaufort Sea continental shelf, although the process of freezing of surface water alone does not appear to be adequate, in

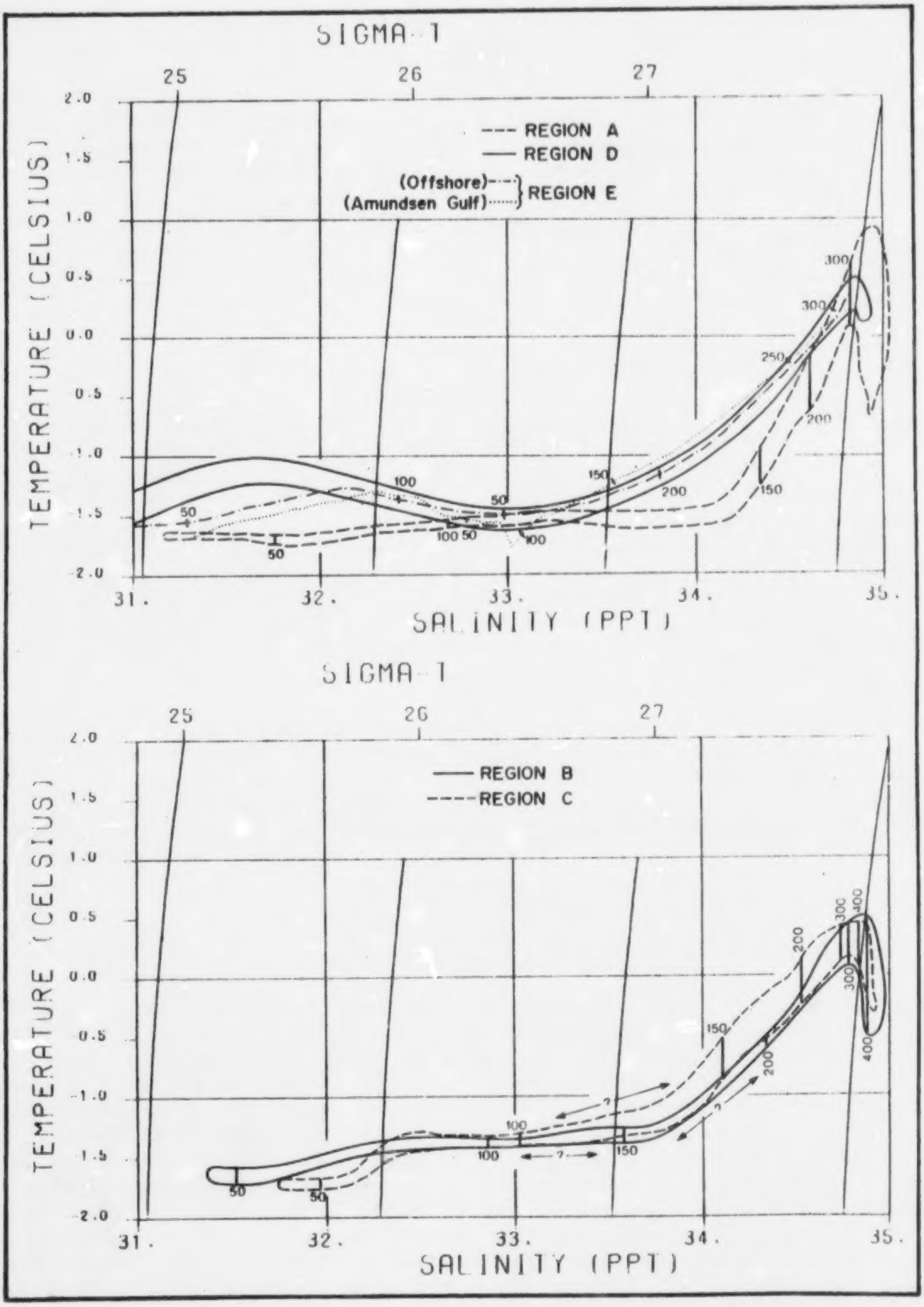

Figure 9: Temperature-salinity diagrams for historical data obtained in the Arctic Ocean.

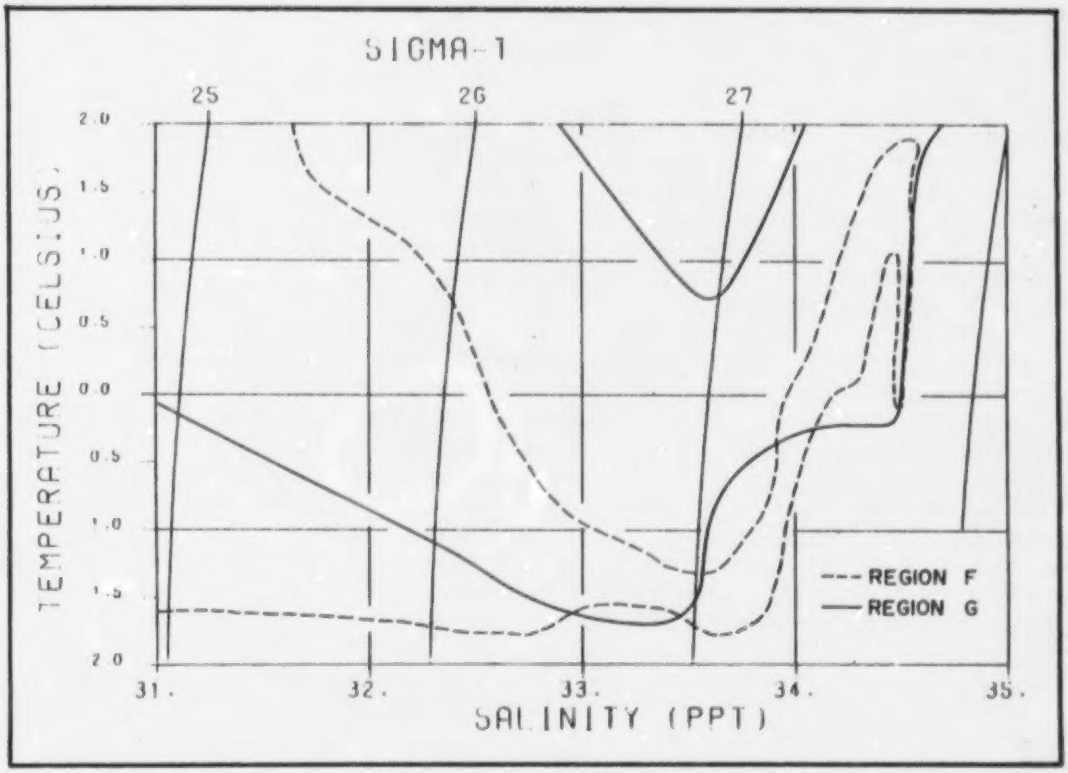

Figure 10: Temperature-salinity diagrams for historical data obtained in Baffin Bay.

terms of the regional sea-ice production, to account for the necessary salinization of the water. Upwelling of more saline offshore water onto the shelf prior to freezing is suggested as one mechanism to produce the required salinities.

Based on the historical data, the cold halocline layer differs significantly from one area to another. In the Beaufort Sea of the Canada Basin (region D), near-freezing temperatures of -1.6 to -1.5°C and salinities of up to 33.4 are found beneath the Pacific summer water down to depths of about 200 m. In the Eurasian Basin (region A), this layer extends from the surface to depths of about 100 m; however, the near-freezing temperatures (-1.4 to -1.7°C) occur at salinities of up to 34.1, considerably higher than those of the Canada Basin (Figure 9). Between these two regions, north of the Canadian Arctic Archipelago (regions B and C), the cold halocline layer has intermediate values in terms of maximum depth (between 100 and 150 m) and maximum salinity (33.8). However, the temperatures are notably higher with values of -1.5 to -1.3°C.

A similar cold halocline layer is also found in Baffin Bay characterized by temperatures of -1.6 to -1.4°C and maximum salinities of 33.7. This layer reaches depths of up to 180 m in northwestern Baffin Bay and eastern Lancaster Sound, while occurring much nearer the surface to depths of 80 to 120 m in northeastern Baffin Bay. Muench (1971) explains this layer as resulting from freezing of the relatively warm and saline waters of the slowly northward moving West Greenland Current, which transports water from Davis Strait along the eastern half of Baffin Bay (region G in Figure 10). From the historical data surveyed in western Baffin Bay (region F), this layer is evident in many but not all profiles (Figure 10), occurring with near freezing temperatures (-1.7 to -1.4°C) to salinities of 33.8 and depths of 200 m (Figure 10). At some locations, for the same depths and salinities, the water temperatures are significantly warmer (-1.4 to -1.0°C) presumably due to the influence of Canada Basin Arctic Water.

Arctic Water - Atlantic Water: Transition Layer

Beneath the cold halocline, both the temperature and salinity increase, representing a transition layer from Arctic to Atlantic Water[1]. In effect, this layer is formed through mixing of two different water types. If the water of this layer simply results from mixing of the cold halocline layer of the Arctic Water above and the warm core of the Atlantic Water below, one would expect to observe a linear curve on the TS diagrams connecting these two water layers.

This does appear to be the case for some of the historical data surveyed. In particular, the TS curves from the Eurasian Basin (region A), and the areas offshore of and over the continental shelf adjoining the Archipelago (regions B and C) exhibit this property. (A few stations in the latter region exhibit anomalously high temperatures, by about 0.3 to 0.4C°, above those of the linear curve; since it was not possible to establish the reliability of these few points, we must consider them as doubtful.)

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[1] In the literature, this layer is often referred to as the main thermocline.

For the Beaufort Sea data (regions D and E), the TS curves in the transition zone layer are not completely linear but exhibit a tendency to increase in slope with increasing salinity on the TS diagrams (Figure 9). This tendency could result through the mixing and differing advection of more than two water types. For example, the deeper part of the transition layer with salinities of 34.3-34.4 could be influenced through mixing of halocline layer water having near-freezing temperatures with high salinities, more characteristic of that of the Eurasian Basin TS curves in the transition layer. On the other hand, the upper portion of the Beaufort Sea layer may reflect the influence of downward mixing of relatively less saline, near-freezing water formed separately (i.e. at a different time or location). If this hypothesis is correct, the Beaufort Sea transition layer is not simply a mixture of two distinct water types but would seem to have a more complex origin than may be the case for the Eurasian Basin transition layer.

The TS profiles of northwestern Baffin Bay exhibit a high degree of variability within the transition zone, both internally and among the various stations. As a result, the envelope containing the TS curves has a width of 0.7 to 1.3C°, at a given salinity, much greater than the corresponding scatter observed in any of the Arctic Ocean regions. This high degree of variability results from the admixture of two markedly dissimilar water types: the relatively warm water of Davis Strait and the relatively cold lower portion of the Arctic Ocean Arctic Water present in northern Baffin Bay, both types occurring at salinities of 33.5 to 34.5. As the water from Davis Strait travels slowly northward, mixing of the water types occurs, resulting in a marked reduction of the mean temperature of the inflowing water.

Additional mixing in northern Baffin Bay results in further attenuation of the mean temperature. Following a detailed analysis of water mass characteristics in northern Baffin Bay, Muench (1971) concluded that mixing between Baffin Bay Atlantic Water and inflowing Arctic Ocean water occurs primarily in the Smith Sound region. This is because only Smith Sound has the necessary deep access to the Arctic Ocean, through Nares Strait, to allow southward flow of sufficiently dense Arctic Water to occur at the same depth as Baffin Bay Atlantic Water. Muench (1971) believed that, by comparison, only a minor amount of mixing of the two water types occurred in Lancaster Sound.

The mixing process in northern Baffin Bay is clearly intermittent resulting, presumably, from variations in the advection of the source water into the mixing areas and subsequent downstream flow variability. This accounts for the considerable scatter in the TS curves observed in the region.

Aside from the scatter of the TS curves in the Baffin Bay transition layer, another notable feature is the decrease in slope of the mean TS curves which occurs with increasing salinity. This change is continuous but appears to be most pronounced at salinities of about 34.0 to 34.3. This inflection in the TS curves may reflect the influence of relatively warm (T of -0.5 to 0.0°C) water at salinities of 34.0 originating either in eastern Baffin Bay or Nares Strait. Such a water type would explain the upward deviation of temperature from the linear curve connecting the cold halocline layer TS characteristics with those of the Baffin Bay Atlantic Water.

Atlantic Water

Underlying the Arctic Water Mass, is the Atlantic Water, defined by Coachman and Aagaard (1974) as waters with temperatures above 0°C. The Atlantic Water of the Canadian Basin is deeper with maximum temperatures at 400 to 500 m, as compared to that of the Eurasian Basin where the warm core occurs at depths of 200 to 300 m. The maximum temperatures of the Atlantic Water decrease from the Eurasian Basin to the Canadian Basin, reflecting the loss of heat due to diffusion with increasing distance from the source region in the area of West Spitsbergen.

Baffin Bay Atlantic Water differs significantly from Arctic Ocean Atlantic Water due to the dominant influence of eastern Davis Strait water. In northeastern Baffin Bay, the warm core of the Atlantic Water has temperatures of 1.3 ± 0.3°C and salinities of 34.4. In northwestern Baffin Bay, the corresponding values are 1.0 ± 0.5°C, 34.4 and 200-400 m (Muench, 1971).

Baffin Bay Atlantic Water occurs at depths below 200 m in northeastern Baffin Bay and is found at greater depths typically below 300-400 m in northwestern Baffin Bay. In Lancaster Sound, Baffin Bay Atlantic Water occupies the lower portion of the water column having nearly identical characteristics with the Atlantic Water of northwestern Baffin Bay. However, Atlantic Water is seldom observed in Jones or Smith Sounds, apparently because the net flow into Baffin Bay from these channels prevents Atlantic Water from entering (Muench, 1971). In the case of Jones Sound, the presence of a sill at depths of 350 to 400 m would also inhibit the entry of Atlantic Water.

The maximum salinities attained in the Baffin Bay Atlantic Water are 34.50 ± 0.05, about 0.5 lower than the corresponding maximum salinities of Arctic Ocean Arctic Water.

5.2 QUEEN ELIZABETH ISLANDS (SECTIONS A, B, C AND D)

On four successive days, March 22-25 inclusive, four lines or sections of oceanographic stations were occupied at the locations shown in Figure 11. Sections B and D span either side of Lougheed Island, traversing the deep trough extending into the Queen Elizabeth Islands from the continental shelf to the north bordering the Arctic Ocean.

Section C represents a set of five stations across Byam Martin Channel; here the water depths range from 130 to 203 m among the stations. The water depth in this area decreases even more further to the south to a limiting sill depth of 100 m in Austin Channel before reaching Parry Channel.

Four oceanographic stations were occupied in Penny Strait, another connecting passage between the channels of the Queen Elizabeth Islands and Parry Channel. Here the bathymetry is complex (Figure 12) with a deep trough having depths exceeding 200 m passing at an oblique angle to the section.

The station locations for sections B, C and D were chosen to be in the vicinity of previous spring CTD measurements taken by Peck (1980b) in April, 1979. In Penny Strait (section A), no CTD stations were occupied in 1979 but an earlier oceanographic survey was carried out in this area in 1976 (Peck, 1977).

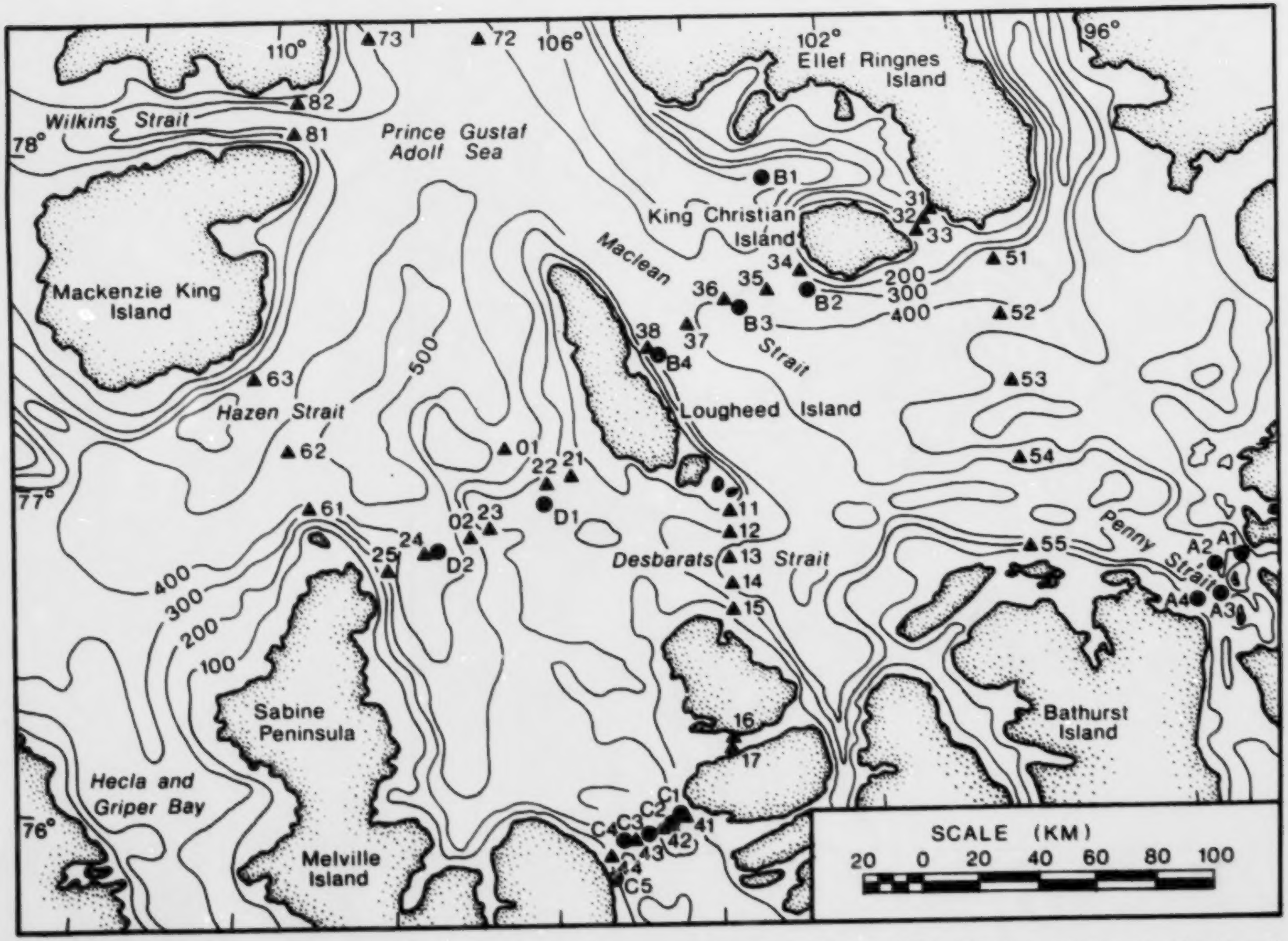

110°
▲73
▲72
106°
102°
Ellef Ringnes Island
96°
▲82
Wilkins Strait
78°
▲81
Prince Gustaf Adolf Sea
B1
King Christian Island
31
32
33
34
35
36
B2
B3
37
38
B4
200
300
400
▲51
▲52
▲53
▲54
▲55
Maclean Strait
Mackenzie King Island
500
▲63
Hazen Strait
Lougheed Island
▲62
01
22
21
D1
77°
▲61
02
23
24
D2
25
11
12
Desbarats 13 Strait
14
15
Penny Strait
A1
A2
A3
A4
400
300
200
100
Sabine Peninsula
16
17
Bathurst Island
Hecla and Griper Bay
C1
C2
C3
C4
41
42
43
44
C5
76°
Melville Island
SCALE (KM)
20
0
20
40
60
80
100

Figure 11: The locations of oceanographic stations occupied in March 1982 (indicated by circles) and in April 1979 (indicated by triangles) in the channels of the Queen Elizabeth Islands.

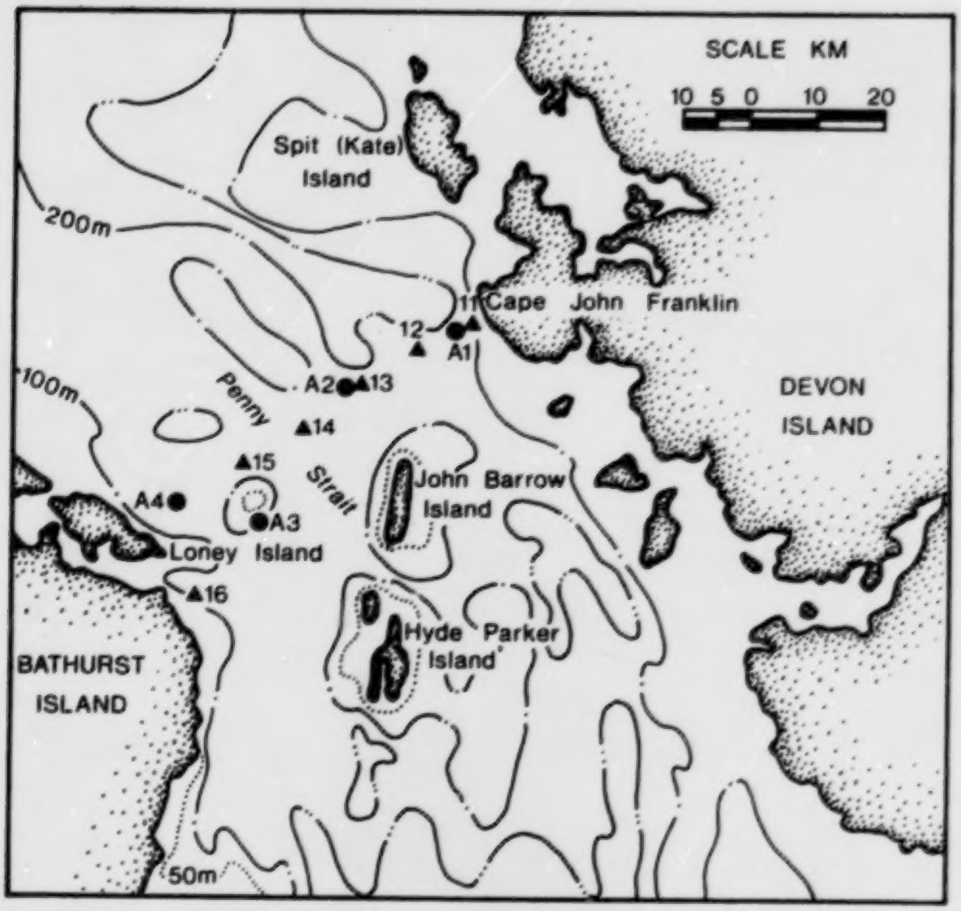

SCALE KM
10 5 0 10 20
Spit (Kate) Island
200m
100m
50m
11
12
A1
Cape John Franklin
A2
13
14
15
16
A3
A4
Penny Strait
John Barrow Island
Loney Island
Hyde Parker Island
DEVON ISLAND
BATHURST ISLAND

Figure 12: The locations of oceanographic stations occupied in March 1932 (indicated by circles) and in April 1976 (indicated by triangles) in Penny Strait.

Temperature-Salinity Characteristics

The water column of the channels of the Queen Elizabeth Islands was characterized by near-freezing temperatures (-1.7 to -1.6°C) from the surface up to salinities of 32.6, below which both salinity and temperature increase over the remainder of the water column (Figure 13). The upper layer of the water column varied considerably among the various stations. For all stations on lines B, C and D, the water column beneath the sea-ice had temperatures within 0.008°C of the surface freezing-point temperature. The depth of this uniformly cold zone varied from 15 to 55 m throughout the area. Within this zone, the salinity structure was uniform throughout at some stations (B4, D1, D2, C2 and C5). At other stations step-like structures appeared (B1 and C1) or the salinity increased more slowly with depth (B2, B3, C3 and C4) by comparison to that of the underlying salinity gradient.

In Penny Strait (section A), the upper zone differs from those of the other sections having near-surface temperatures significantly above the freezing-point temperature by 0.060 to 0.090°C. In addition to the elevated temperature, the salinities near the surface are larger, ranging from 32.5 to 33.0 as compared to 31.9-32.4 for both sections B and C and 31.6-31.7 for section D. The upper zone of Penny Strait is characterized by weak vertical gradients in both temperature and salinity.

Only a few of the CTD profiles obtained in the Queen Elizabeth Islands revealed a temperature maximum below the upper zone. Even where such a feature occurred (stations B1, B3, D2 and C4) the maximum was very weak with peak temperatures of -1.66 to -1.60°C. The temperature maxima coincided with relatively large salinity gradients; peak temperatures occurred at salinities of 32.4 to 32.6. Given the comparatively high salinities and the weakness and intermittency of the temperature maxima, it seems unlikely that these represent a major intrusion of the Pacific summer water found in the Beaufort Sea.

Below the upper 50 m of the water column, there is no cold halocline layer evident in the Queen Elizabeth Islands similar to that which occurs in the Arctic Ocean. Rather the temperature and salinity simultaneously increase, representing a transition zone between near-surface and Atlantic Water. This combined thermocline and halocline extends from depths of 50 to 60 m up to depths exceeding 300 m, where the temperatures and salinities approach the warm, saline levels of Atlantic Water. The TS curves of sections B, C and D follow one another very closely (Figure 13). In section A, the deeper portion of the water column exhibits similar characteristics with those of the other sections. Near the surface, however, an increased scatter is found in the TS curves of section A. This results from larger surface salinities on the east side of Penny Strait.

A review of the spring 1979 oceanographic data obtained by Peck (1980b) suggests that the TS characteristics were very similar three years earlier, although the variability among individual stations was greater (Figure 13). Both the 1979 and the 1982 data sets show the same tendency for temperature and salinity to simultaneously increase from cold, near-surface salinities up to Atlantic Water salinities. The 1982 TS data tend to follow the upper portion, in terms of temperature, of the 1979 TS envelope. Aside from the lesser range in the 1982 data, the depth of specific TS points seems to have increased in comparison with the 1979 data. For example, the depth of the

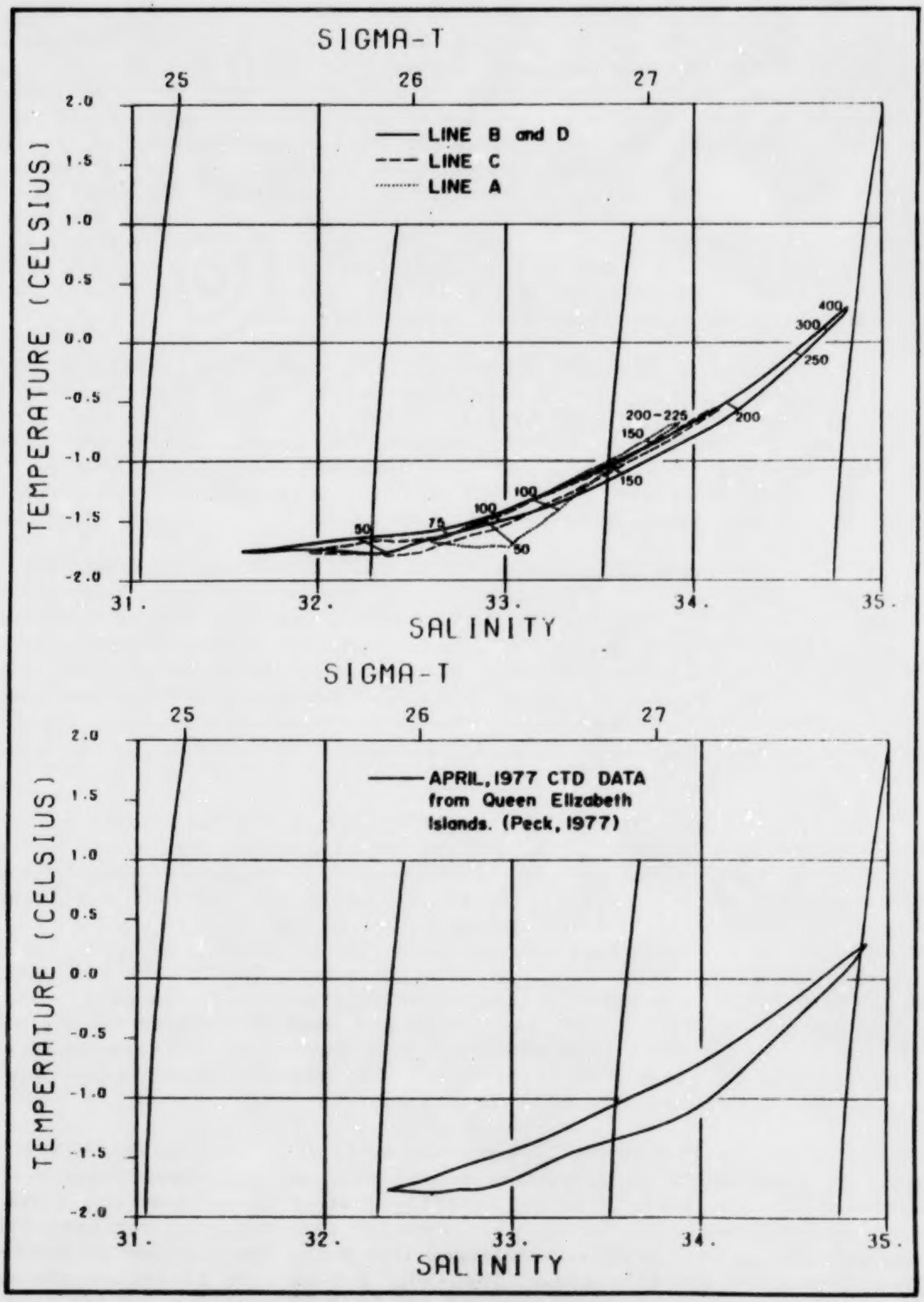


Figure 13: (upper) The range of T-S values for combined sections B and D, for section C and for section A. (lower) The range of T-S values from selected stations of the April 1979 CTD survey (Peck, 1980b).

33.0 isohaline increased from about 85 m in 1979 to just over 100 m in 1982. A similar increase is apparent in the 34.0 isohaline, increasing from 155 m in 1979 to 180 m in 1982.

Both the 1979 and 1982 spring CTD data differ significantly from the historical water mass data available for the adjoining continental shelf area to the north and further offshore in the Arctic Ocean (regions B and C, Figure 7). The water in the channels of the Queen Elizabeth Islands is considerably warmer for salinities above values of 33.0 to 33.3 and somewhat colder for salinities below this range. For the higher salinities, which span depths of about 125 to 250 m, the difference is largest at salinities near 34.0 with agreement between the regions being attained as the Atlantic Water is encountered. At a salinity of 34.0, the difference between the core of the two sets of TS curves amounts to about 0.45C°, representing a considerable degree of warming of the waters of the Queen Elizabeth Islands. For these depths (150 to 200 m) water can only pass into the area of interest from the north as shallower sills limit free exchange of water to the south and east.

Within the Queen Elizabeth Islands themselves, the water of the transition layer shows a tendency to increase in temperature to the south and the east, away from the Arctic Ocean. This is seen in the decreased mean temperatures at a salinity of 33.9, from station D2 (-0.87 at 180 m), to station B3 (-0.81 at 177 m), to station C2 (-0.79 at 155 m), to station A1 (-0.72 at 163 m). An examination of the more detailed, but less synoptic CTD survey of 1979, reveals the same trend on a salinity surface of 34.0. The temperatures decrease from Prince Gustaf Adolf Sea in the north (-0.94±0.06) to the vicinity of section D (-0.90±0.04), to section B (-0.81±0.06), to section C (-0.77±0.02). While no stations were occupied in Penny Strait, a line of stations across Belcher Channel just northeast of the Strait, showed that temperatures had risen to -0.80±0.02 at a salinity of 34.0.

The source of this warming of the water column is not clear. Water of similar TS characteristics can be found in Jones or Lancaster Sounds but only at depths in excess of 250 m. It seems highly unlikely that this water could enter the Queen Elizabeth Islands since the water would have to rise to depths of less than 120 m to pass over the sills separating the areas. A more likely possibility would be vertical mixing occurring within the region, mixing the underlying the Atlantic Water (T>0°C, S>34.7) with the colder, fresher waters above. This could produce the appropriate TS characteristics. Such mixing may be enhanced by tidal or other types of flows around the extensive shallow areas found in the southeast portion of the area, particularly in Belcher Channel and the Norwegian Sea. Possibly, the apparent warming to the south and east may be associated with the polynyas found in the southeast connecting channels (i.e. Penny Strait, Queens Channel, Cardigan Strait and Hell Gate).

Atlantic Water is found in the Queen Elizabeth Islands at depths exceeding 264-283 m as measured at stations B1, B2, B4 and D2. At the other stations on the B and D sections and for all stations on sections A and C, the water column was not deep enough to permit the presence of Atlantic Water. Where Atlantic Water is found, it tends to become very uniform in its TS characteristics at relatively large depths. The upper boundary of the near uniform TS properties varies among the stations: 350 m (B1), 390 m (D2) and 300 m (B4). This uniformity results from the presence of sills separating the deep trough on the eastern side of Prince Gustaf Adolf Sea from the waters adjoining Lougheed Island. Temperatures fall in the range of 0.12 to 0.29°C

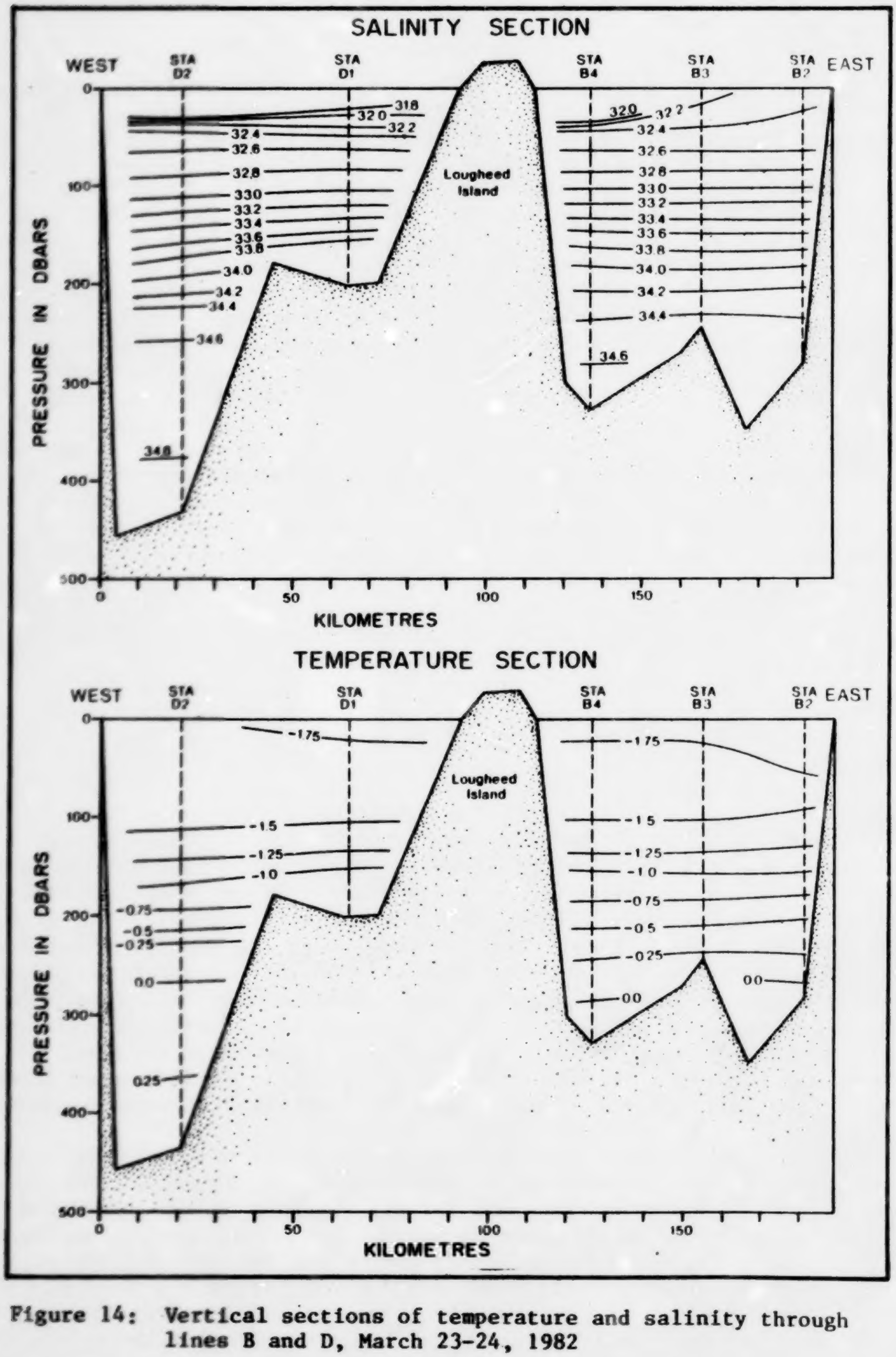


Figure 14: Vertical sections of temperature and salinity through lines B and D, March 23-24, 1982

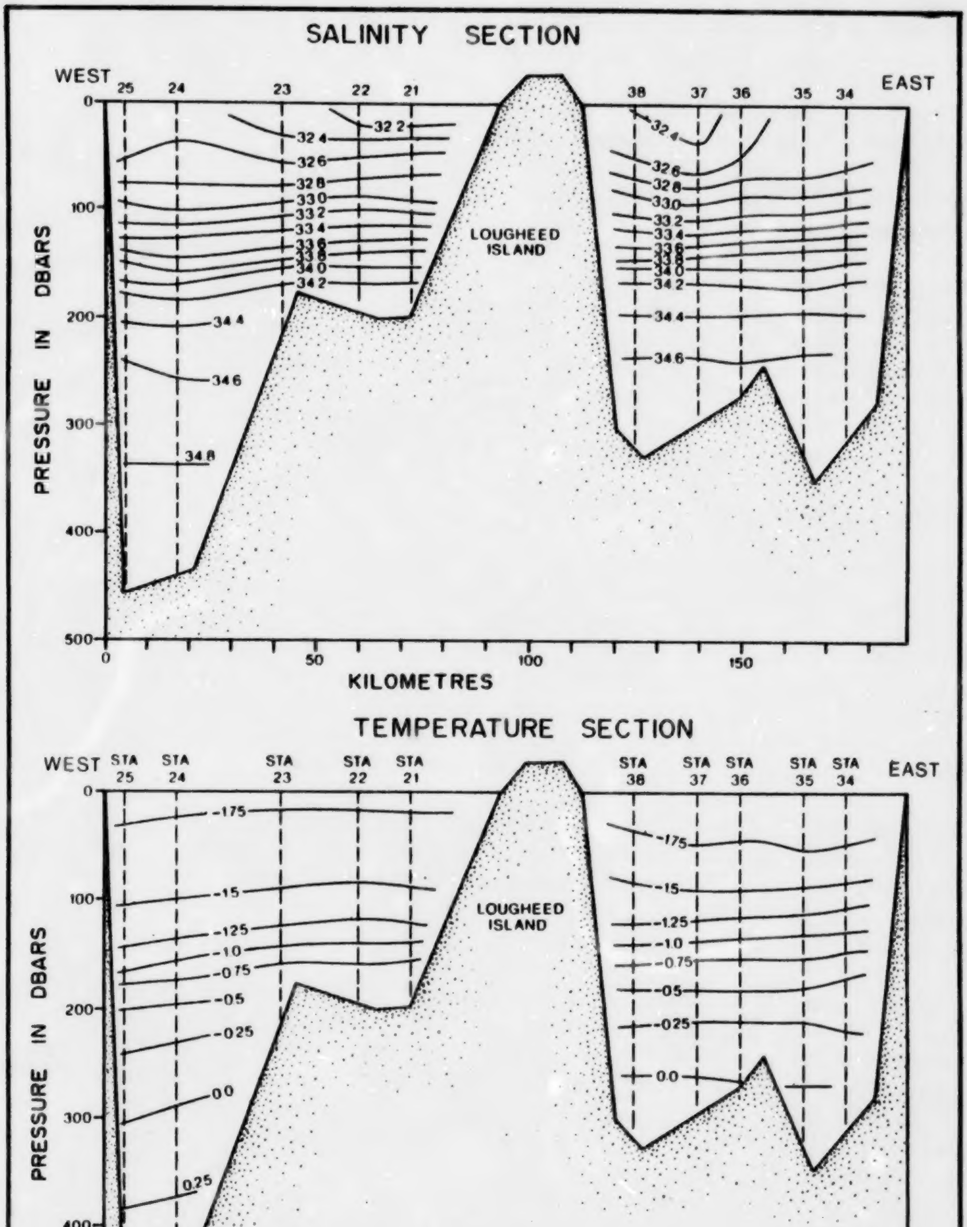


Figure 15: Vertical sections of temperature and salinity in the vicinity of lines B and D, April 1979 (Peck, 1980b).

with salinities of 34.70 to 34.82. In the spring of 1979, similar nearly isothermal and isohaline conditions were found at the deeper stations with temperatures ranging from 0.12 to 0.28 at depths of 300 to 400 m.

The temperatures in the deepest portion of the Atlantic Water in the Queen Elizabeth Islands may be reduced from those observed at the same depths in the adjoining portion of the Arctic Ocean. Data obtained from ice island T-3 as it passed north of the Arctic Archipelago (region B, Figure 7) indicate mean temperatures of 0.41°C at 400 m as compared to 0.28°C in the Queen Elizabeth Islands in 1979 and 1982. Based on the spring data collected by Collin (1961) over the continental shelf (region C, Figure 7) the explanation may be associated with processes on the continental shelf. In one oceanographic section extending offshore, the temperatures at 400 m decreased from values of 0.41°C over the continental slope to 0.22-0.28°C over the continental shelf. This downward tilt of the isotherms (and isohalines, as well) in the Atlantic Water may result in relatively low temperatures of the deep Atlantic Water in the channels of the Queen Elizabeth Islands.

Vertical Sections

The vertical section from Ellef Ringes Island through Lougheed Island to the Sabine Peninsula of Melville Island (section B and D) indicate relatively small horizontal gradients in both the temperature and salinity fields (Figure 14). Note that the horizontal resolution is coarse, particularly through section D, with the result that smaller scale gradients would not be resolved. Near-surface salinities decrease from east to west, with the opposite trend occurring in the temperatures, but this horizontal gradient is limited to the upper 20 to 30 m of the water column.

The computed baroclinic component of the geostrophic velocities through the section are small, as one would expect for an area of weak horizontal salinity gradients. Using a 200 dbar reference level, the flow at 10 dbar between stations B2 and B4 is 1.2 cm/s southward while the equivalent velocity between stations D1 and D2 is only 0.7 cm/s.

In the spring of 1979, weak horizontal gradients again characterized this section, implying small geostrophic flows (Figure 15). The near-surface salinities were somewhat higher in 1979, particularly on the west side of Maclean Strait and throughout section D. At depths from 100 to 250 m, the water column was characterized by higher salinities (by about 0.2) and higher temperature (by about 0.25C°), although following the same TS curve as discussed above.

The vertical distributions of section C, over the width of Byam Martin Channel, reveal a general downward tilt of both isohalines and isotherms toward the west at depths greater than 50 m (Figure 16). The gradients increase markedly on the western side of the Channel. At lesser depths, the horizontal gradients are more complex: salinities decrease from the easternmost station (C1) to station C4 but then increase again at station C5. The temperatures above 50 m tend to increase from station C1 to C2, then decrease again at stations C3 and C4 and increase at station C5.

The geostrophic currents at 10 dbar relative to 200 dbar are relatively strong on the western half of the Channel with a southerly velocity of 14.9 cm/s to the south (station C5 and C3). The southward geostrophic flow

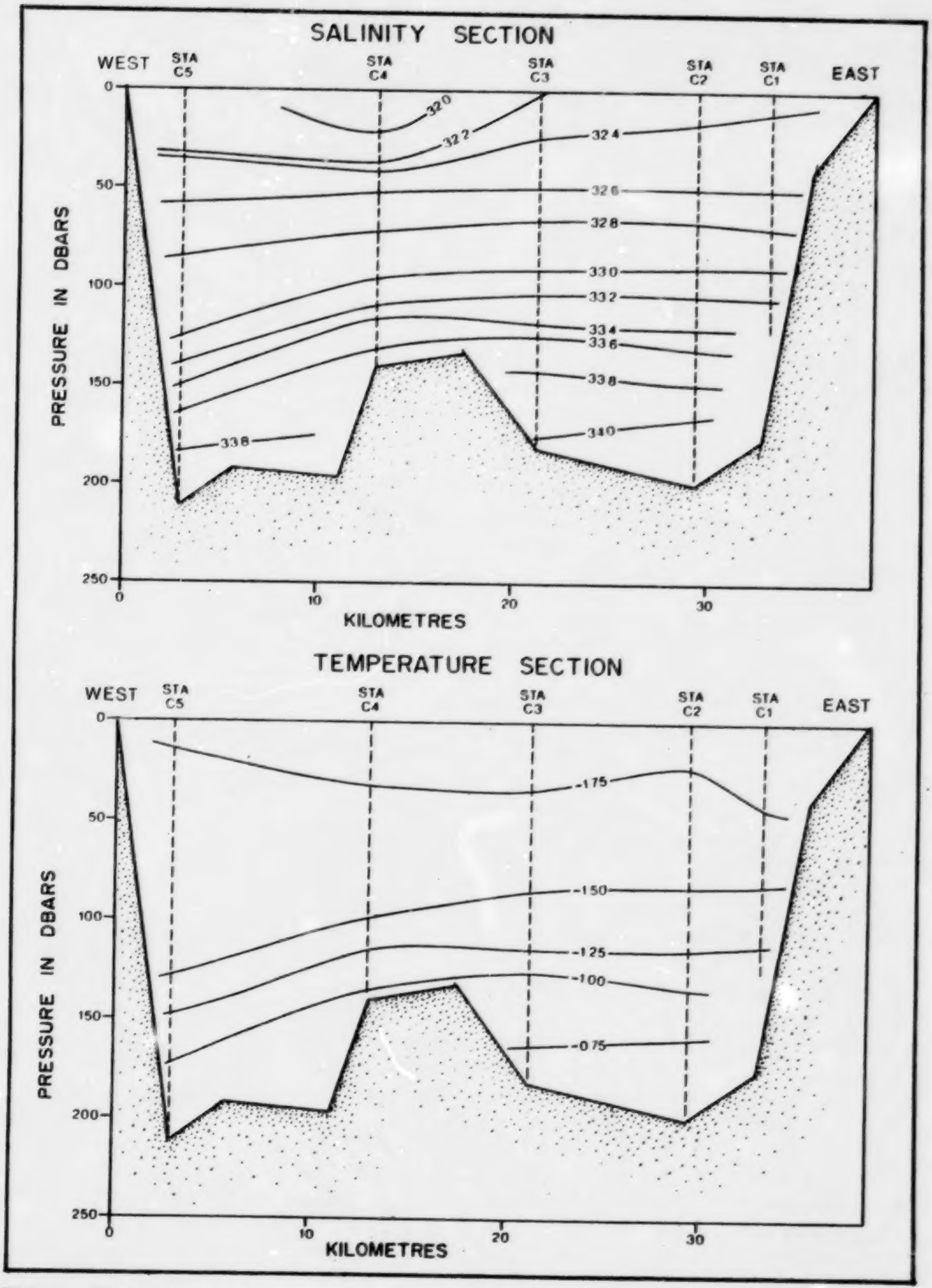


Figure 16: Vertical sections of temperature and salinity through line C in Byam Martin Channel, March 26, 1982.

extends to depths near the bottom as indicated by the slope of the isohalines from station C4 to C5. Between stations C3 and C2, the flow at 10 dbar relative to 200 dbar is much smaller with a magnitude of less than 0.5 cm/s. This absence of any marked geostrophic currents appears to extend eastward to station C1, as indicated by near level isohalines from station C2 to C1.

A comparison with the CTD measurements obtained in April 1979, shows that southerly geostrophic flows were not as prominent at that time (Figure 17). A westerly downward tilt of isohalines is evident between the two central stations, but is not as large as that observed on the west side in 1982. Furthermore, the net tilt between the western and eastern pair of stations (44 and 43; 42 and 41) is weak and opposite to those of the central stations, suggesting a small northward flow on either side of the Channel in 1979.

The vertical sections of temperature and salinity across Penny Strait (section A) show a very pronounced gradient of salinity, increasing toward the east (Figure 18). The water column at station A1 is characterized by relatively high temperatures and salinities throughout. Near the surface, at 5 m, the salinity is just over 33.00, the largest near-surface value recorded in the 1982 study. At depths from 150 m to near the bottom (235 m), the water temperature is uniformly warm, with values of -0.73 to -0.70°C. The salinities in this deep portion of the water column are also nearly constant at 33.88 to 33.92.

The geostrophic flow through the section is relatively strong, with a velocity of 17.7 cm/s southerly between stations A1 and A4 at 10 dbar relative to 200 dbar. The southerly flows are evident between each pair of stations and throughout the water column, as suggested by the downward tilt of the isohalines. The strongest geostrophic flows occur on the east side of the Strait. Computations of the geostrophic current at 10 dbar relative to 150 dbar amount to 20.3 cm/s for station pairs A1 and A2, 6.7 cm/s for A2 and A3 and 9.1 cm/s for A3 and A4. This strong southerly flow on the east side of the Strait coincides with a deep trough passing through the complex bathymetry of Penny Strait.

5.3 M'CLURE STRAIT AND M'CLINTOCK CHANNEL (SECTIONS E, M AND K)

CTD stations were occupied on a line across M'Clure Strait on March 26 (Figure 19). Nine days later, on April 4, CTD profiles were obtained across an east-west section of northern M'Clintock Channel, and, on April 6, three CTD profiles were obtained in southern M'Clintock Channel (Figures 20 and 21). The results of these three oceanographic sections will be presented together, since the deep trough extending southward at depths of more than 200 m from Viscount Melville Sound into M'Clintock Channel is a continuation of the relatively deep trough in M'Clure Strait. Sills exist at the mouths of both Channels, which limit the free exchange of water from the Arctic Ocean into M'Clure Strait to depths of 380 m, and limit the free flow of water from Viscount Melville Sound into M'Clintock Channel to depths of approximately 290 m or less.

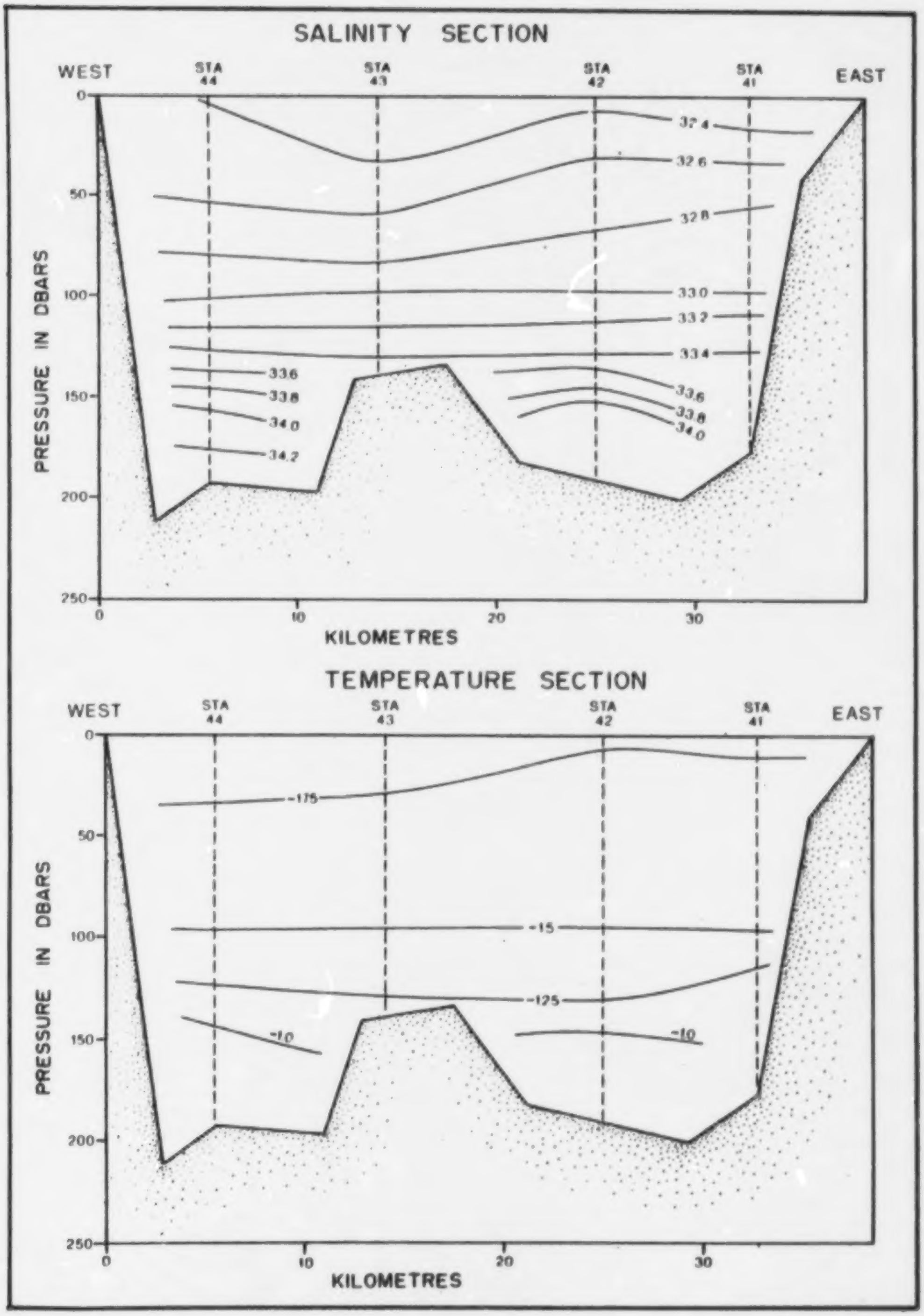


Figure 17: Vertical sections of temperature and salinity through Byam Martin Channel, April 1979 (Peck, 1980b).

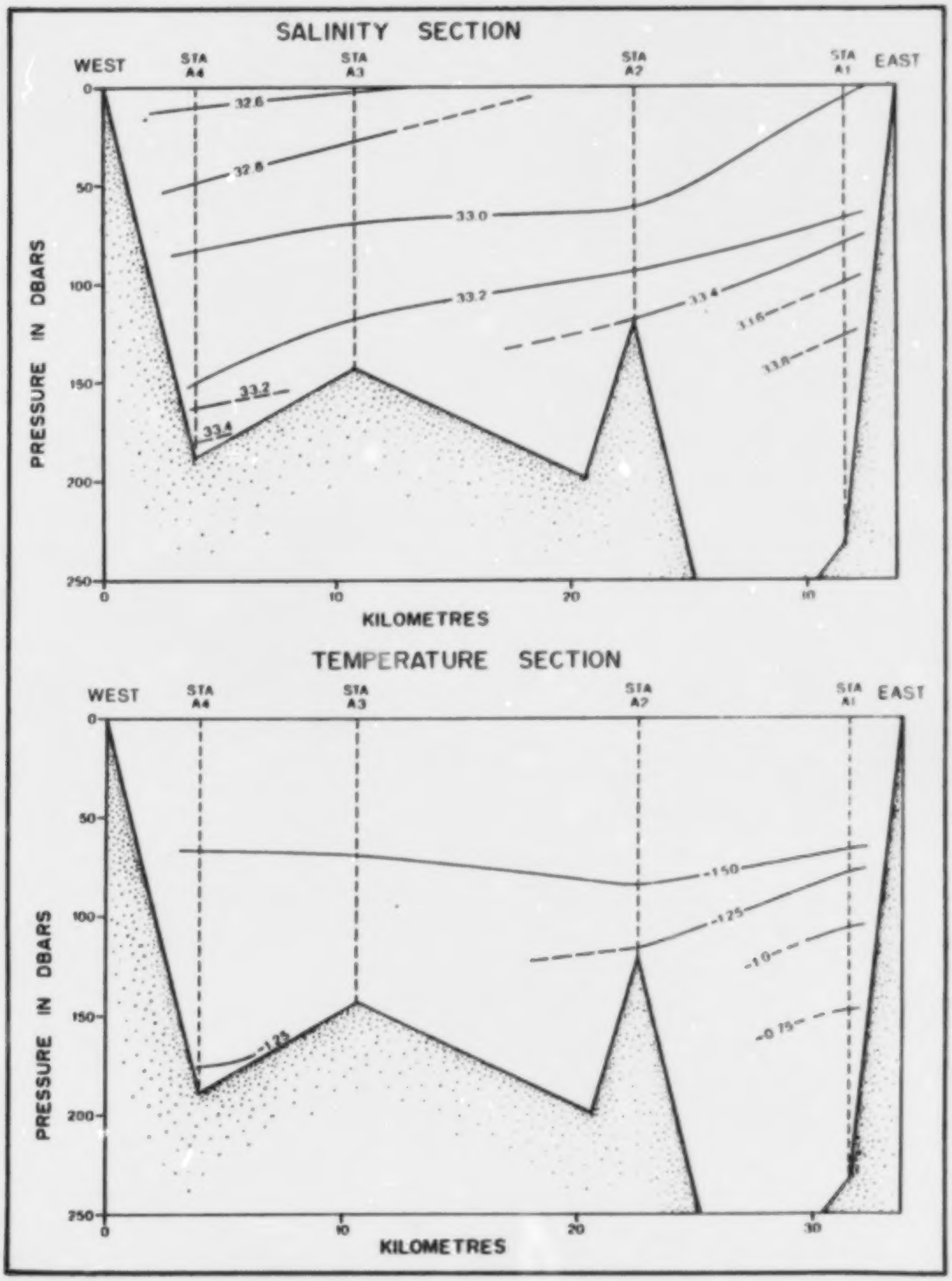


Figure 18: Vertical sections of temperature and salinity through section A in Penny Strait, March 22, 1982.

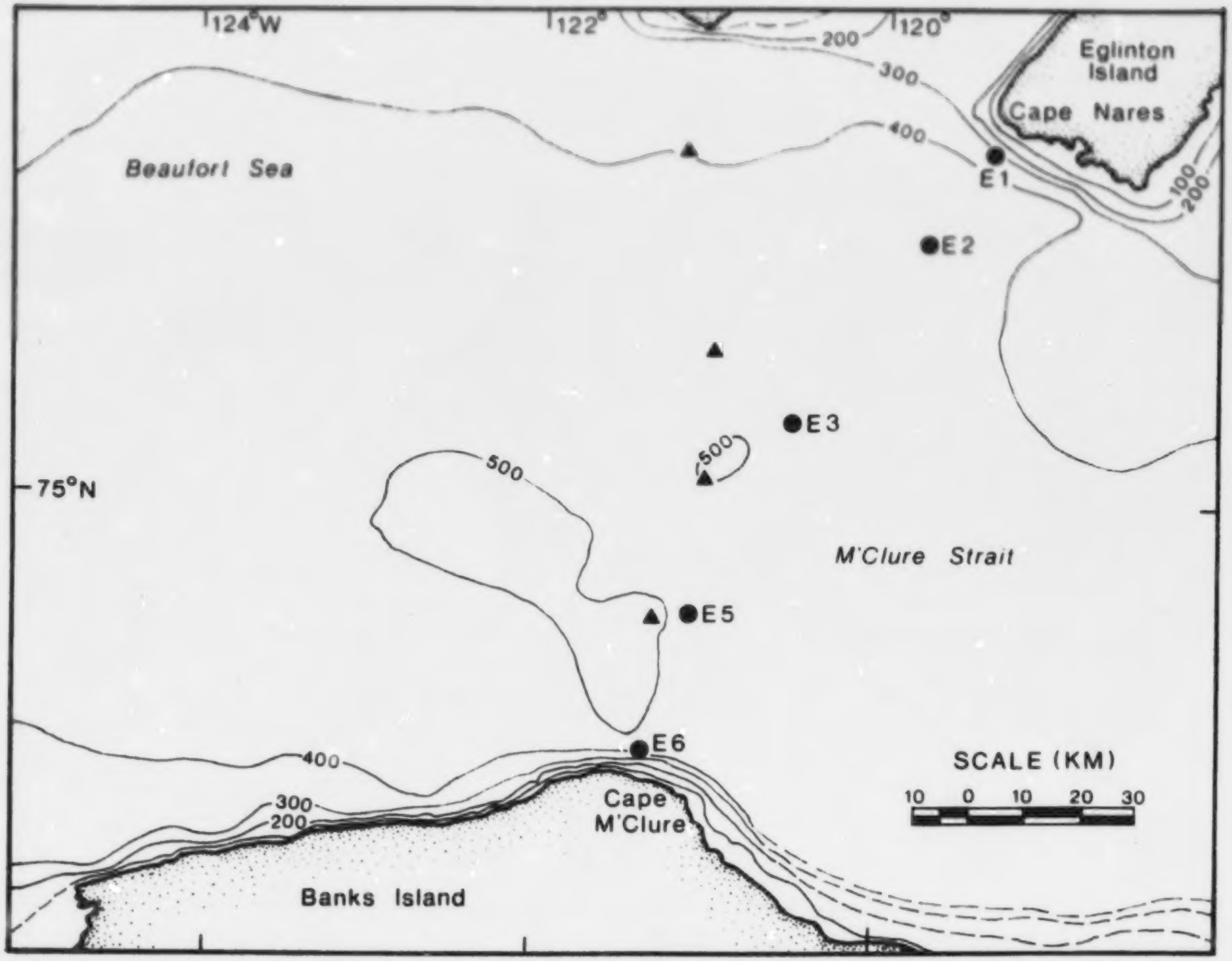

124°W
122°
120°
75°N
Eglinton Island
Cape Nares
Beaufort Sea
M'Clure Strait
Banks Island
Cape M'Clure
E1
E2
E3
E5
E6
100
200
300
400
500
500
400
300
200
SCALE (KM)
10 0 10 20 30

Figure 19: The locations of CTD stations occupied March 26, 1982 across M'Clure Strait. Also shown are bottle stations in the same area occupied in 1961 (indicated as triangles).

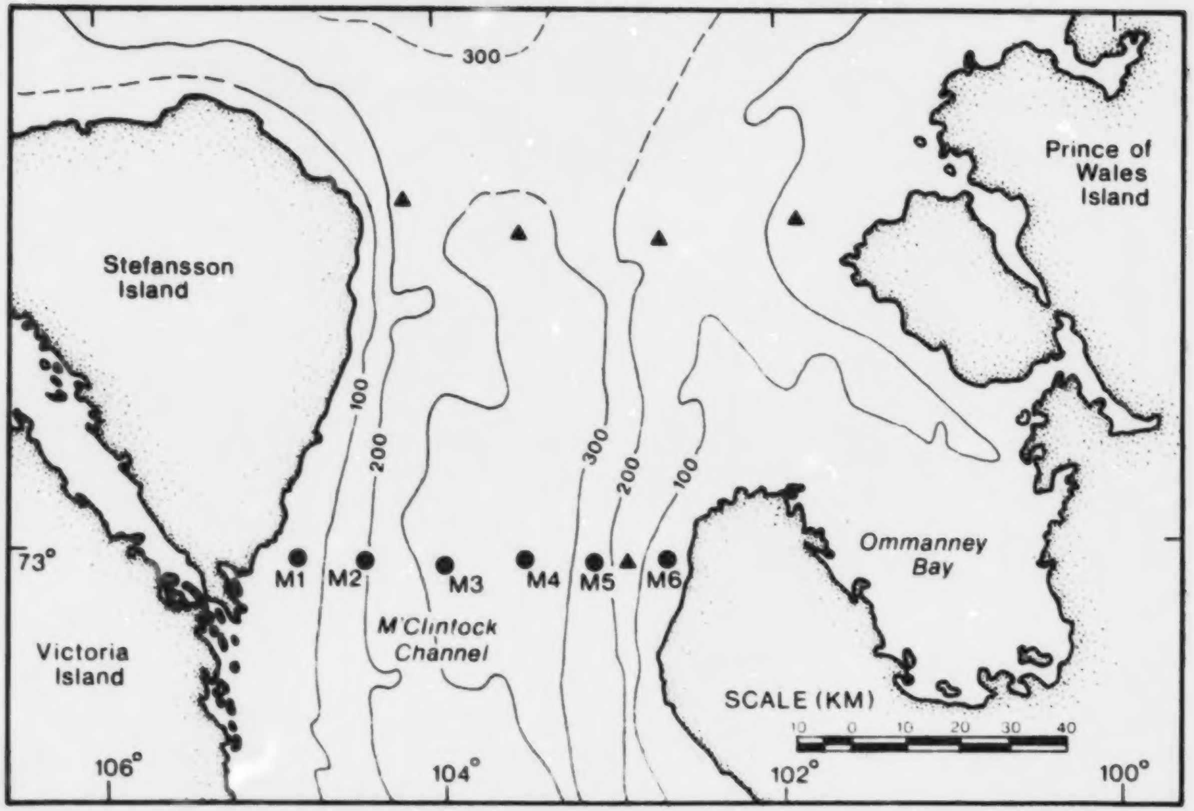

300
Prince of
Wales
Island
Stefansson
Island
100
200
300
200
100
Ommanney
Bay
73°
M1
M2
M3
M4
M5
M6
M'Clintock
Channel
Victoria
Island
SCALE (KM)
10
0
10
20
30
40
106°
104°
102°
100°

Figure 20: The locations of CTD stations across northern M'Clintock Channel occupied on April 4, 1982. Also shown are 1978 CTD stations, indiated as triangles.

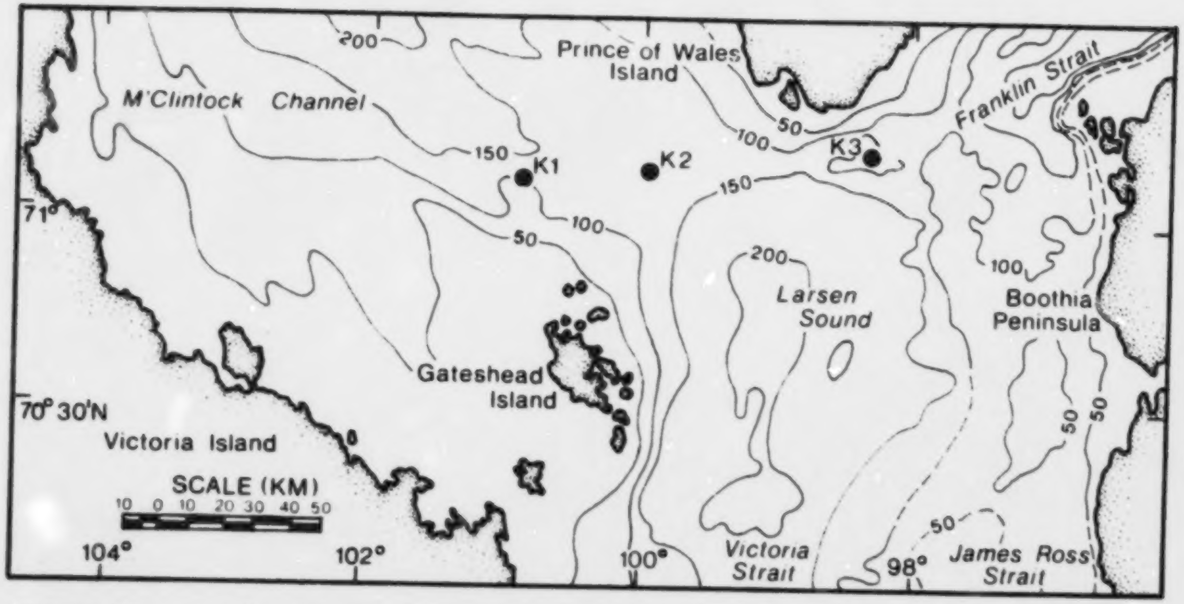

200
Prince of Wales Island
M'Clintock Channel
150
K1
K2
100
50
K3
Franklin Strait
71°
150
100
50
200
Larsen Sound
100
Boothia Peninsula
Gateshead Island
70° 30'N
Victoria Island
50
50
SCALE (KM)
10 0 10 20 30 40 50
50
104°
102°
100°
Victoria Strait
98°
James Ross Strait

Figure 21: The locations of CTD stations across southern M'Clintock Channel occupied on April 6, 1982.

Temperature-Salinity Characteristics

The upper layer of the water column was characterized by constant values of both temperature and salinity, with temperatures within 0.01C° of the surface freezing-point values. Only at the westernmost stations of section M, were the salinities not constant within the upper zone. The thickness and salinity of the upper zone exhibited a distinct tendency to decrease further into the Archipelago. In M'Clure Strait, the thickness was 45 to 55 m, decreasing in M'Clintock Channel to values of 25 to 40 m in the northern section (M) and 15 to 35 m in the southern section (K). The upper zone salinities decreased from 32.25 to 32.42 on section E, to a range of 31.60-31.80 for line M and 30.50-30.91 for line K.

This feature is formed from a sharp increase in temperature and salinity at the base of the upper zone followed by a slight decrease in temperature, observed at some stations. A weak temperature maximum is found beneath the upper zone in many of the profiles. This decrease, if present, occurs at depths of up to 25 m below the base of the upper zone. (See example of individual profiles in Appendix B.) On line E, this feature has maximum temperatures of -1.6°C with salinities ranging from 32.4 to 32.5. The temperature maximum is observed only at three (M3, M4 and M5) of the six stations on line M, with peak temperatures of -1.56°C, at salinities from 32.4 to 32.6. The temperature maximum is more pronounced at the K-line stations in southern M'Clintock Channel: here, the maximum temperatures range from -1.42 to -1.49°C and the salinities are lower at 31.8 to 32.2 The depth of the temperature maximum varies from 22 to 35 m.

At depths beyond the intense thermocline marking the bottom of the upper zone and through the weak temperature maximum layer, both the temperature and salinity generally increase with depth towards the Atlantic Water Mass characteristics (Figure 22). However, the temperature gradient is relatively small to depths of 100 to 150 m, gradually increasing at larger depths. These reduced temperature gradients nearer the surface could be a remnant of the cold halocline layer. The cold halocline extending to depths of about 140 m, is characterized by comparatively weak temperature gradients, with temperatures of -1.4°C at the base of this layer. Beneath this depth, the magnitude of the temperature gradient is larger, and both temperature and salinity increase to depths of 250 to 300 m, where Atlantic Water is encountered. At the stations in M'Clintock Channel, the cold halocline layer was not as evident, having more uniform temperature gradients from beneath the temperature maximum layer to the Atlantic Water.

At some of the stations in M'Clure Strait, small scale temperature gradients occurred in the lower part of the cold halocline layer and the upper part of the transition zone layer. These features were most pronounced at stations E2 and E3, having amplitudes of 0.05C° and thicknesses of 2 to 5 m. They occurred over depths of 150 to 200 m at station E2 and at lesser depths, 120 to 160 m, at station E3. At station E6, similar temperature features occurred but with reduced amplitudes (0.02C°) and thicknesses (1 to 3 m).

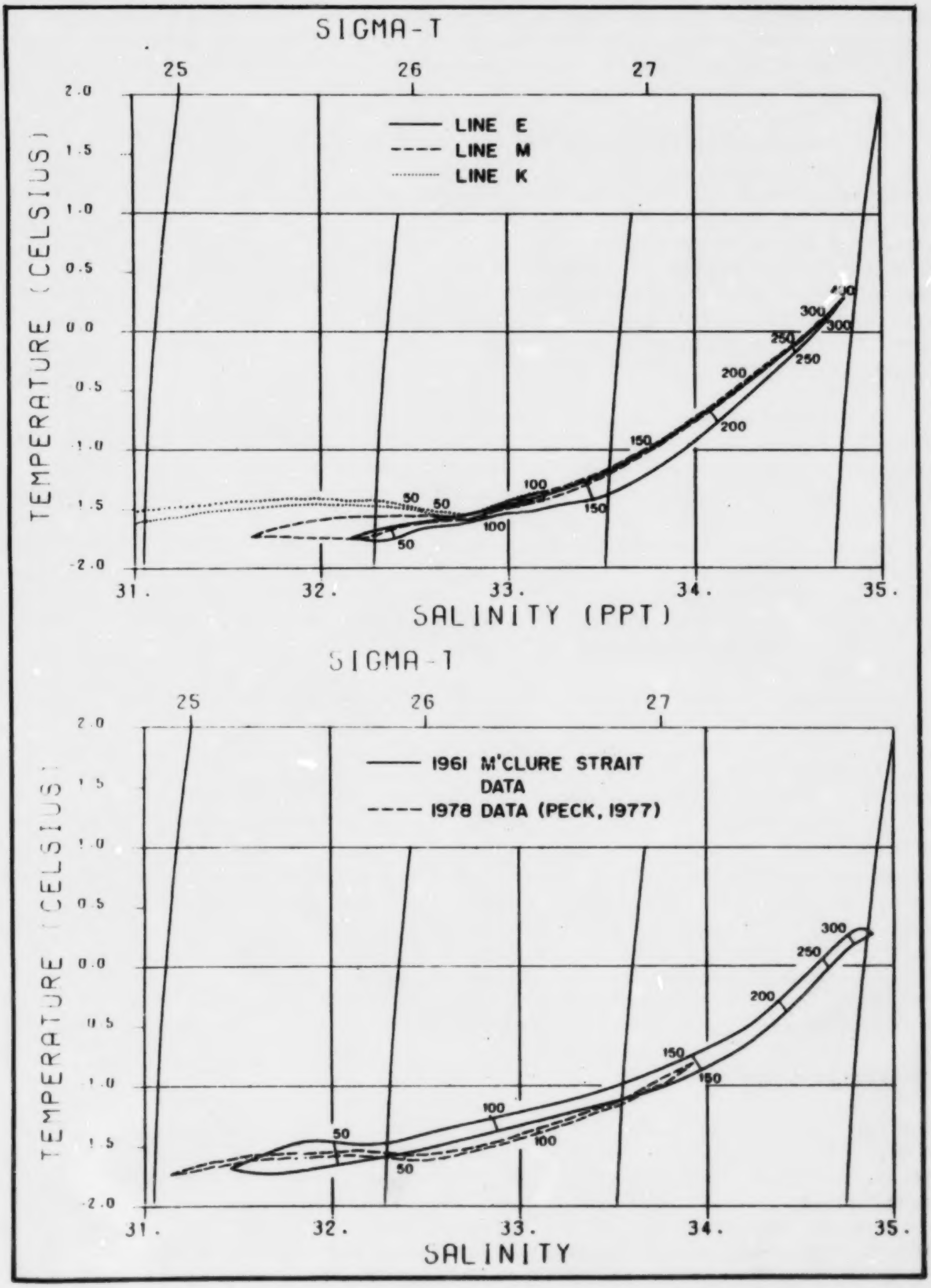


Figure 22: (upper) The envelope enclosing TS curves of lines E (M'Clure Strait), M (northern M'Clintock Channel) and K (southern M'Clintock Channel). (lower) The envelope enclosed TS curves of bottle data obtained in M'Clure Strait in 1961 and CTD data obtained in northern M'Clintock Channel in 1978.

The water mass characteristics of the transition layer tend to be more variable in M'Clure Strait than northern M'Clintock Channel (Figure 22). For a given constant salinity in the range 33.5 to 34.5, the temperatures can vary by 0.05 to 0.10°C on line E. In northern M'Clintock Channel (line M) the corresponding temperature range is less than 0.02C°.

The temperatures in the transition zone of northern M'Clintock Channel tend to be warmer than those of M'Clure Strait for the same salinity. For example at a salinity of 33.9, the temperature at stations M3, M4 and M5 are -0.85±0.01 as compared to -0.93±0.06 at stations E1 through E6. The corresponding depth ranges are 160 to 175 m in M'Clintock Channel and 172 to 197 m in M'Clure Strait. In nearby areas of the Arctic Ocean, historical data suggest that temperatures are lower than those of M'Clure Strait (Figure 9). This tendency towards higher temperatures with greater distance from the Arctic Ocean, is similar to that observed in the Queen Elizabeth Islands, as discussed in Section 5.2.

At those stations where the water column is sufficiently deep, Atlantic Water is found at depths below 268 to 287 m. Beyond these depths, the temperature and salinity gradients are much reduced. In M'Clure Strait, the water column is characterized by virtually constant temperature and salinity values of 0.31°C and 34.83, at depths greater than 390 m. These constant values result from the sill at the mouth of M'Clure Strait limiting free exchange to depths above this level. A similar effect is evident in northern M'Clintock Channel where uniform water mass characteristics (0.08°C and 34.68) occur at depths greater than 290 m due to a sill with a comparable depth to the north in Viscount Melville Sound.

Only very limited amounts of under-ice oceanographic data are available for the purpose of comparisons to estimate long-term variability. A set of four bottle stations were occupied in 1961 in M'Clintock Strait at the locations shown in Figure 19. The only springtime oceanographic data available for M'Clintock Channel consist of four CTD profiles collected in 1978 by Peck (1980a) at locations 65 km north of line M (Figure 20). For the M'Clure Strait comparisons, the TS characteristics (Figure 22) show good agreement for the transition zone and the Atlantic Water, but for lesser depths in 1961 the temperatures beneath the upper zone were higher by 0.1 to 0.2C°. As for the northern M'Clintock Channel data of 1978, the shallower water depths prohibit comparisons beyond depths of 150 m but above this, the TS characteristics agree remarkedly well, with the only notable differences occurring in the variable upper zone. In 1978, both the salinities and thickness of the upper zone were reduced in comparison with the 1982 results.

Vertical Sections

The vertical sections for temperature and salinity across M'Clure Strait (Figure 23) indicate that while spatial gradients do occur in the horizontal, the sign of the gradients tends to vary from one station pair to the next, resulting in weak gradients over the width of the Strait. This is illustrated, for example, by the depth of the 33.6 isohaline. The magnitude, and even the sign, of the horizontal gradients varies considerably with depth. For example, depths of the 34.2 isohaline changes in almost exactly the opposite manner to that described above for the 33.6 isohaline. Some of the observed horizontal gradients are related to the existence of intense vertical gradients occurring over a portion of the water column at one station which

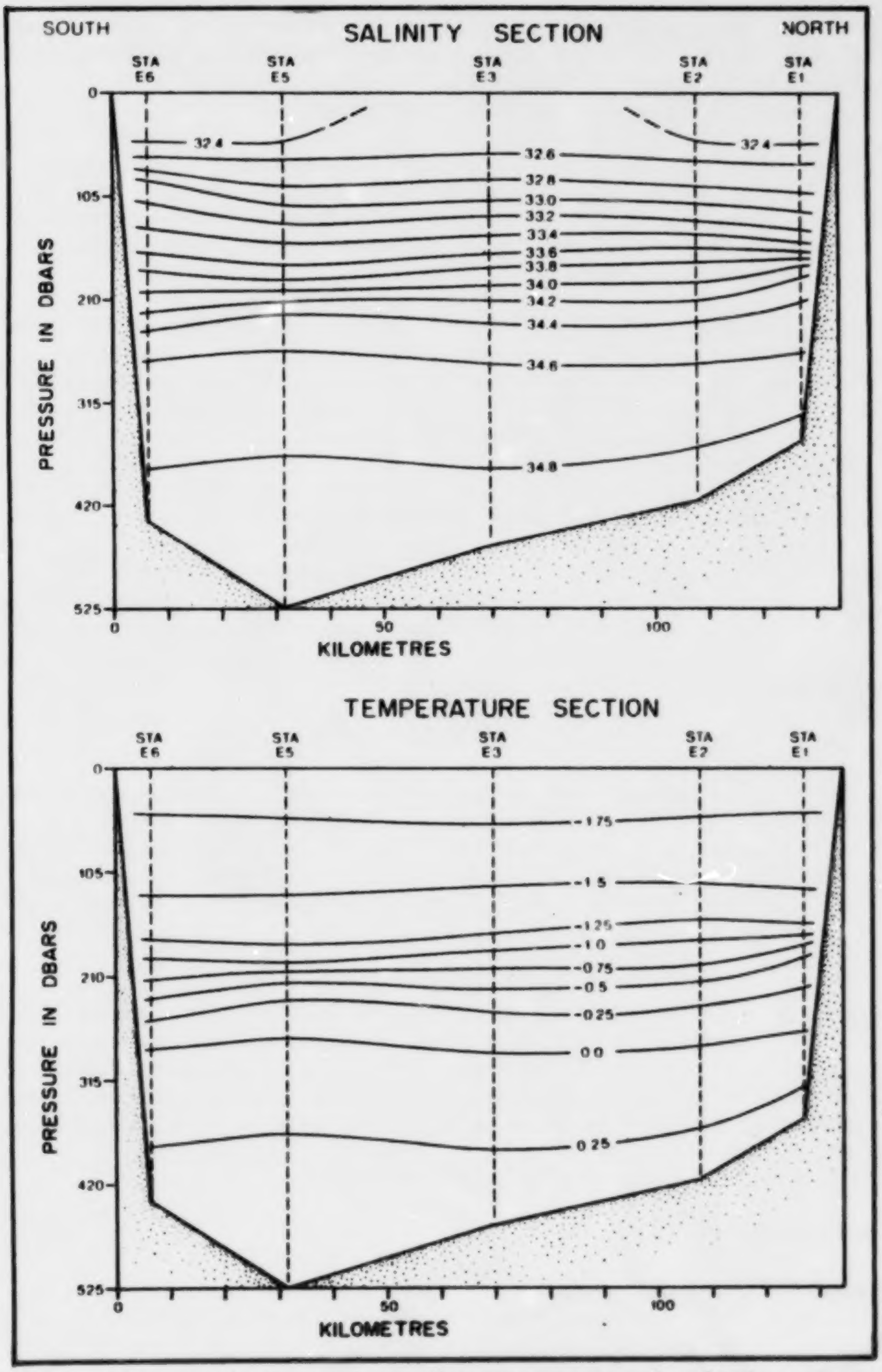


Figure 23: Vertical sections of temperature and salinity across M'Clure Strait, March 26, 1982.

are not nearly as intense at adjacent locations. The most prominent of these large vertical gradients occur at station E1 from 160 to 190 m, at station E5 from 190 to 220 m and at station E6 from 50 to 90 m. Since many of the observed horizontal gradients appear to have length scales comparable to the station separation of about 30 km, the actual scale of the horizontal gradients could be even smaller than indicated.

In the vertical sections of the 1961 data (not shown), the strait-wide horizontal gradients were very weak, in agreement with the 1982 results. Shorter scale horizontal gradients are not nearly as evident in the 1961 data, due to the much coarser vertical resolution of the bottle cast samples as well as to the somewhat increased station spacing.

The geostrophic velocities reveal pronounced variations from one station pair to another (Figure 24). At depths of 160 to 200 m, a maximum or minimum in the eastward current occurs in the geostrophic current profile. On the north side of M'Clure Strait, this current core is directed eastward with a peak velocity of 4.8 cm/s at 180 dbar relative to 400 dbar. A similar, though less intense feature is apparent for station pairs E5 and E6 and E3 and E5 near the same depths. Over the uppermost 100 dbar of the water column, the geostrophic velocities computed relative to 400 dbar suggest a net outflow from M'Clure Strait to the Arctic Ocean on the southern side with a weaker net inflow on the northern side.

Across northern M'Clintock Channel, the vertical sections (Figure 25) suggest that the salinities increase from east to west above 50 m and decrease at depths below 100 m. The horizontal gradients of temperature, like those of salinity are weak, with a general tendency to decrease from east to west over the deeper portion of the water column.

As one might expect, the computed geostrophic currents are small through this vertical section. The geostrophic current at 10 dbar relative to 250 amounts to 1.4 cm/s southward for station pairs M3 and M4 and 0.3 cm/s northward for station pairs M4 and M5. Geostrophic currents at 100 dbar relative to greater common depths are more consistently southward with values of 0.04 cm/s for M2 and M3 (150 dbar), 3.0 cm/s for M3 and M4 (250 dbar) and 3.1 cm/s for M4 and M5 (250 dbar).

For the relatively shallow CTD stations across southern M'Clintock Channel, the salinities increase from east to west, particularly for the westernmost pair of stations K1 and K2, above 70 m depth (Figure 26). As a result of this gradient in salinity, and hence density, the geostrophic flow is northward at 10 dbar relative to 100 dbar between stations K1 and K2 with a magnitude of 1.5 cm/s. For stations K2 and K3, the geostrophic velocities are very low, with magnitudes of less than 0.1 cm/s.

5.4 AMUNDSEN GULF

From March 29 to April 2, inclusive, 25 CTD stations were occupied in Amundsen Gulf and in the entrances to Dolphin and Union Strait and Prince of Wales Strait (Figure 27). Station separations are typically 50 to 60 km over most of Amundsen Gulf, but are reduced to 20 km or less across the entrances

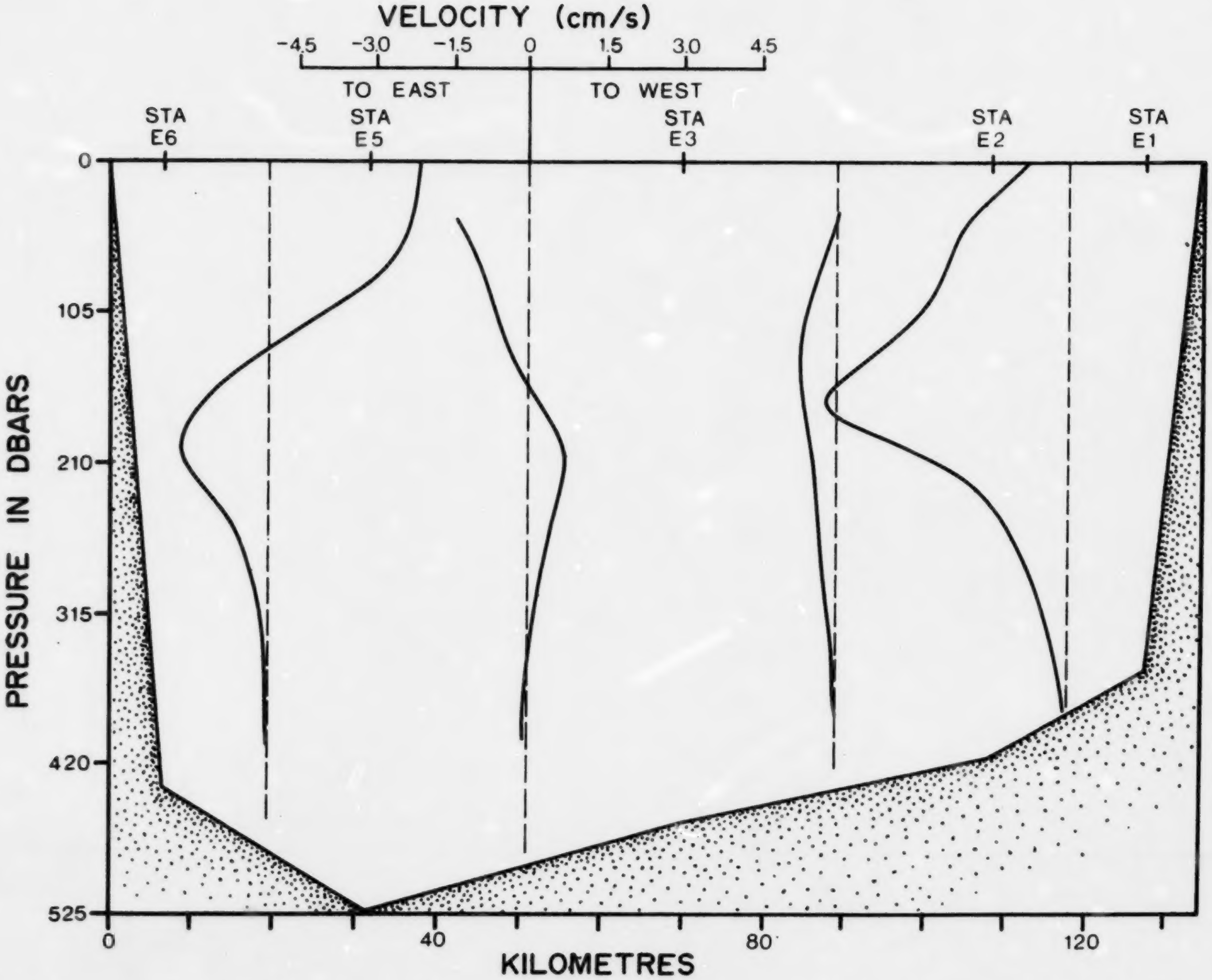


Figure 24: Profiles of geostrophic currents computed for adjacent station pairs in M'Clure Strait. All currents are computed relative to the 400 dbar level.

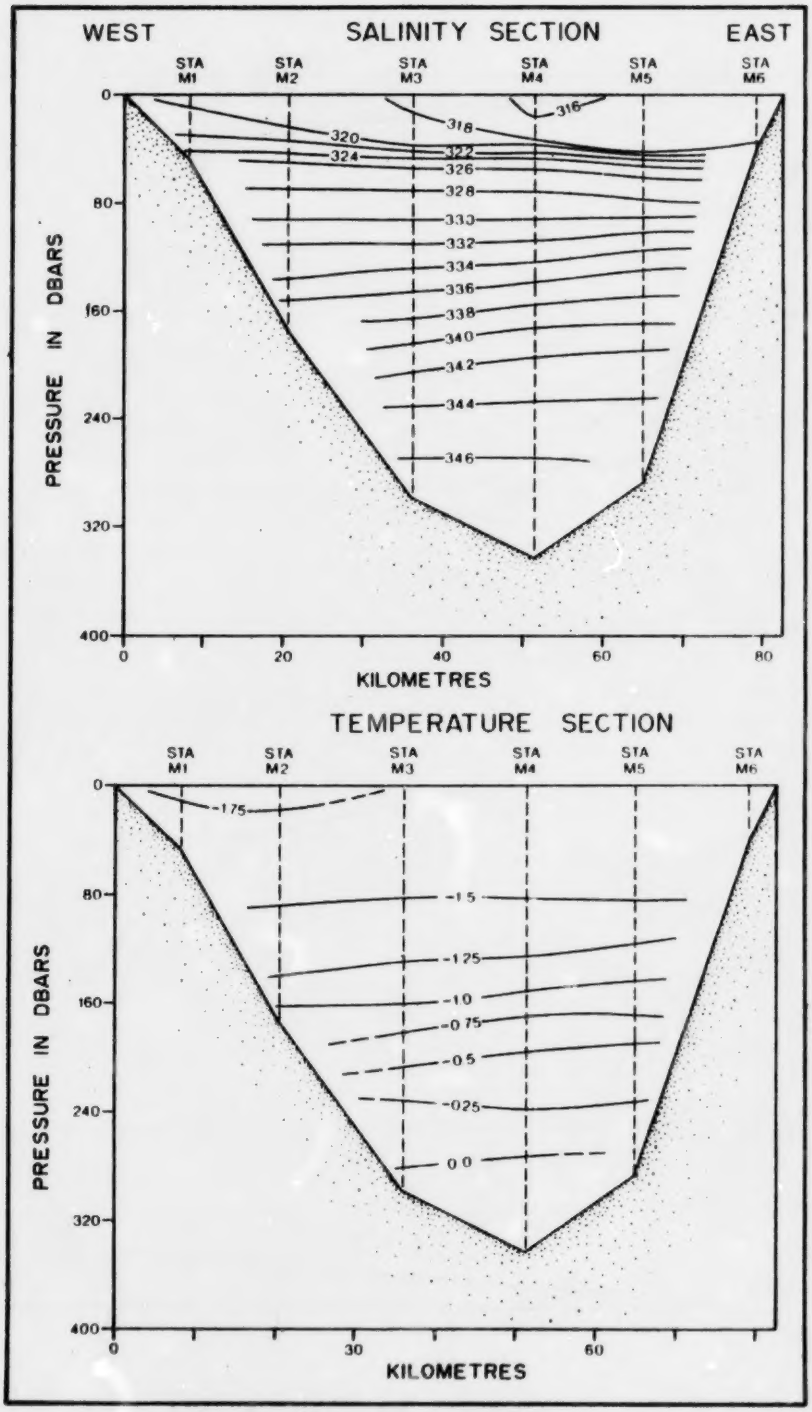


Figure 25: Vertical sections of temperature and salinity across northern M'Clintock Channel, April 4, 1982.

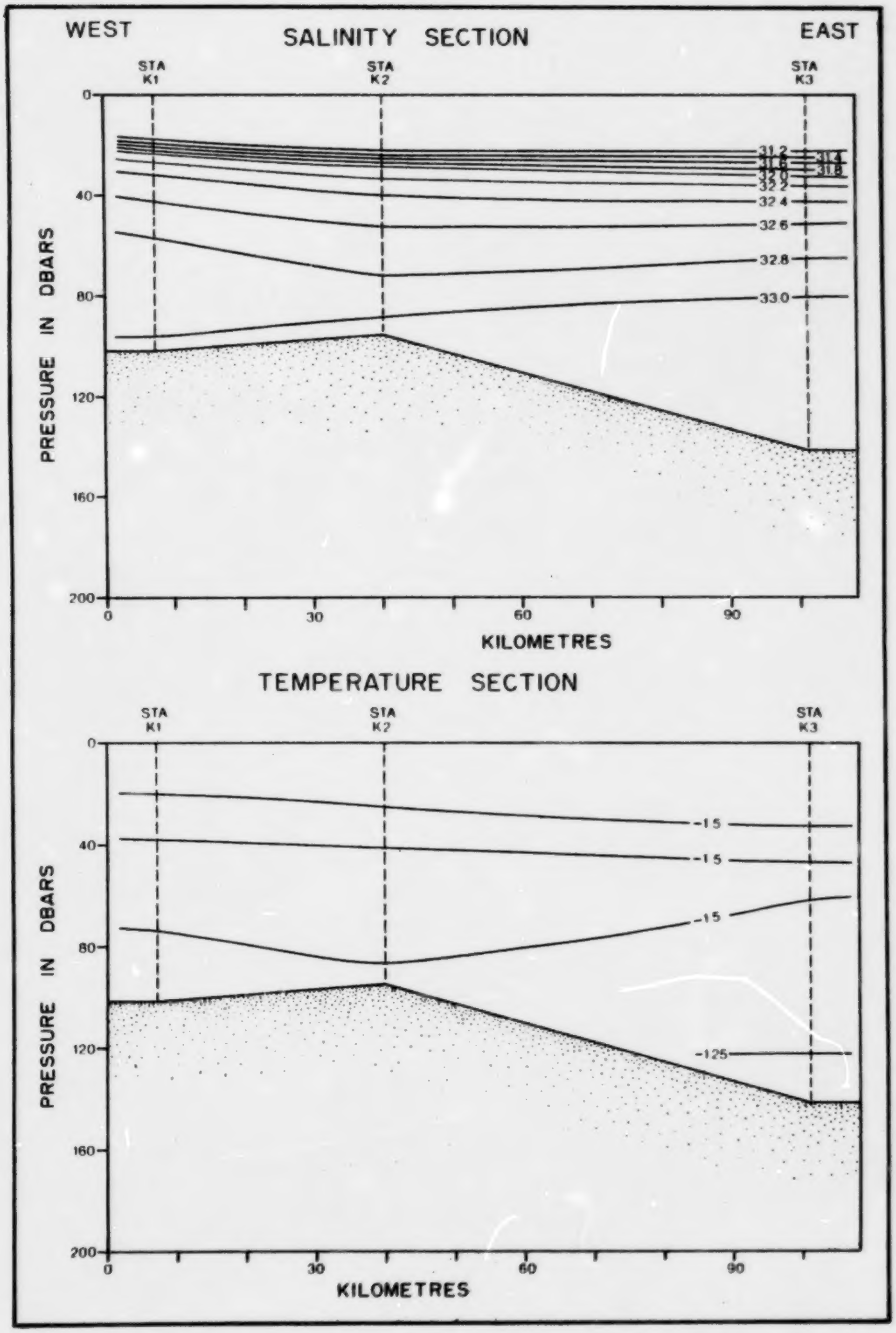


Figure 26: Vertical sections of temperature and salinity across southern M'Clintock Channel, April 6, 1982.

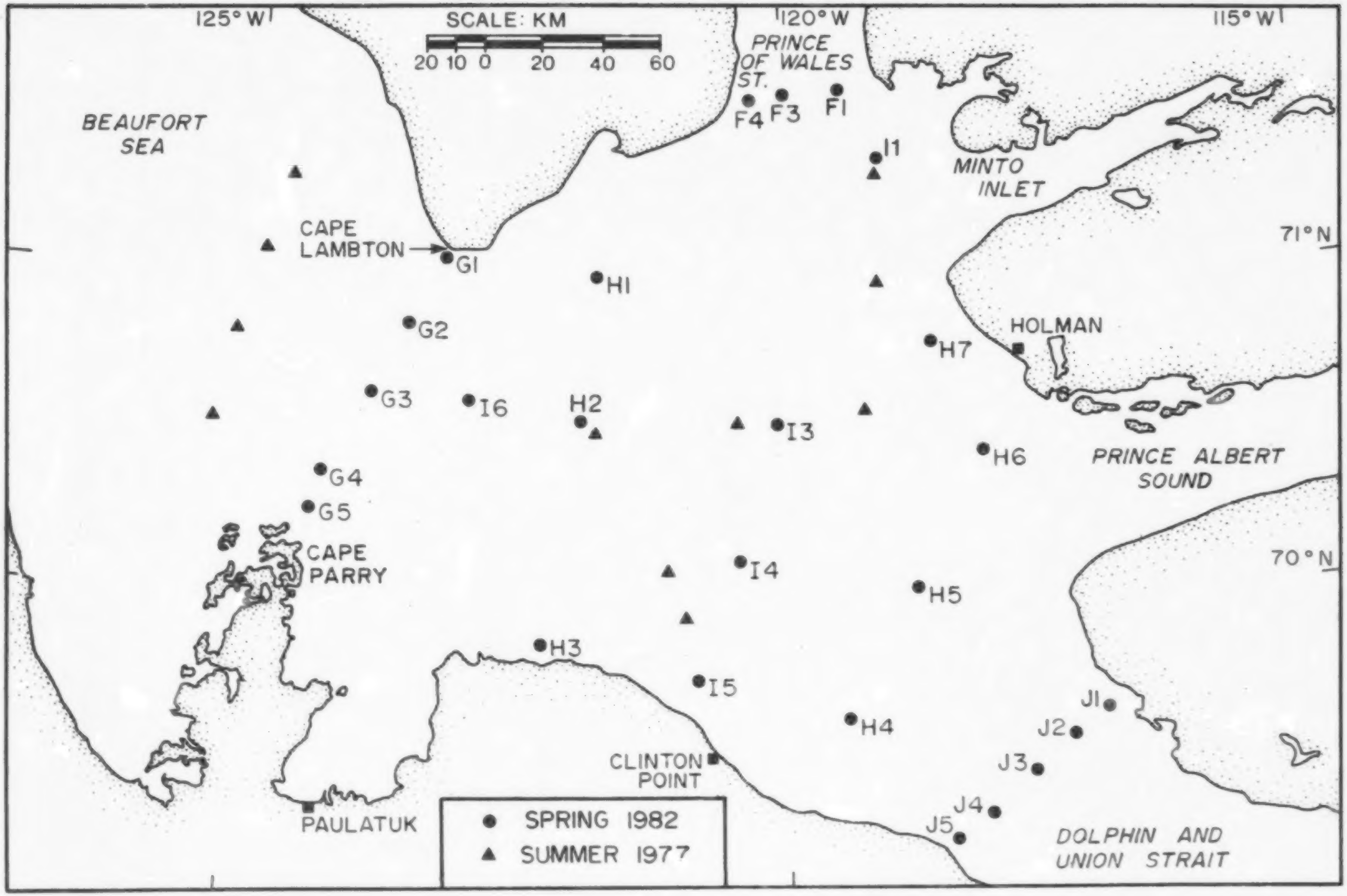

125° W
120° W
115° W
71° N
70° N
SCALE: KM
20 10 0 20 40 60
BEAUFORT SEA
CAPE LAMBTON
PRINCE OF WALES ST.
MINTO INLET
HOLMAN
PRINCE ALBERT SOUND
CAPE PARRY
PAULATUK
CLINTON POINT
DOLPHIN AND UNION STRAIT
F4
F3
F1
I1
G1
H1
G2
H7
G3
I6
H2
I3
H6
G4
G5
I4
H5
H3
I5
J1
H4
J2
J3
J4
J5
● SPRING 1982
▲ SUMMER 1977

Figure 27: The locations of CTD stations occupied from March 29-April 2, 1982 in Amundsen Gulf. Also shown are locations of bottle cast data collected in the summer of 1977(Macdonald et al., 1978).

to Dolphin and Union Strait and Prince of Wales Strait. Across the relatively narrow constriction between Cape Parry and Cape Lambton, the typical spacing amounts to about 30 km.

Unfortunately, due to adverse landing conditions on the sea-ice (Section 2.2), separations amounted to distances of up to 100 km over a large portion of northeastern Amundsen Gulf. To the west of Cape Parry, no stations could be occupied at all. Nevertheless, the number and density of oceanographic stations of the present study represents the most detailed study of Amundsen Gulf completed to date and the first such study to be carried out from the sea-ice.

Amundsen Gulf forms a relatively deep basin extending from the Beaufort Sea through a trough across the continental shelf. Within the trough, the free passage of water is limited to an estimated depth of approximately 325 m, at locations northwest of Cape Parry. Further to the east, the basin deepens, with depths exceeding 400 m over much of the Gulf. This relatively deep water extends as far east as the entrances to Dolphin and Union Strait, to depths of 350 m, and to Prince Albert Sound, to depths of about 250 m. On the south side of Amundsen Gulf, the deep water reaches to within 20 to 30 km of the coastline, with the exceptions of the relatively shallow Franklin and Darnley Bays. However, on the northern side of the Gulf from Cape Lambton to Minto Inlet, the water shallows to depths of less than 200 m over an extensive area decreasing further to maximum depths of about 140 m in southern Prince of Wales Strait.

Temperature-Salinity Characteristics

The envelope of TS curves for the CTD stations occupied each day are presented in Figure 28. The upper zone layer is characterized by uniform temperatures within 0.02C° of the surface freezing point temperature. Unlike temperature, salinities are not constant through this layer, tending to increase slowly with depth. The bottom of the upper zone is marked by a comparatively large gradient in salinity along with an abrupt increase in temperature. The thickness of the upper zone as defined by uniformly cold temperatures (Figure 29) ranges from 18 to 58 m. Generally, the layer is thicker in the central and eastern part of the Gulf with values ranging from 28 to 38 m, decreasing towards Dolphin and Union Strait and Prince of Wales Strait. In the southern and western areas of the Gulf, the upper zone is thinner, typically about 20 m with the notable exception of station G5 near Cape Parry where the zone extended to the bottom at 58 m.

The salinity of the upper zone showed marked horizontal gradients, as indicated by a map of salinity at 5 dbar (Figure 29). The highest near-surface salinities occurred in the vicinity of Cape Parry at 32.82 remaining relatively high further to the east along the southern side of Amundsen Gulf, as indicated by the 32.0 isohaline. Relatively low near-surface salinities of 30.5 or less were found in Dolphin and Union Strait. These low salinities appear to continue northward from the Strait along the eastern side of Amundsen Gulf. In northern and central portions of the Gulf, the horizontal salinity gradients are small with 5 dbar salinities ranging from 31.50 (I1) to 31.76 (H2).

At all but two locations (stations G5 and G2), a temperature maximum was found beneath the upper zone. The peak temperature value varied from -1.70°C

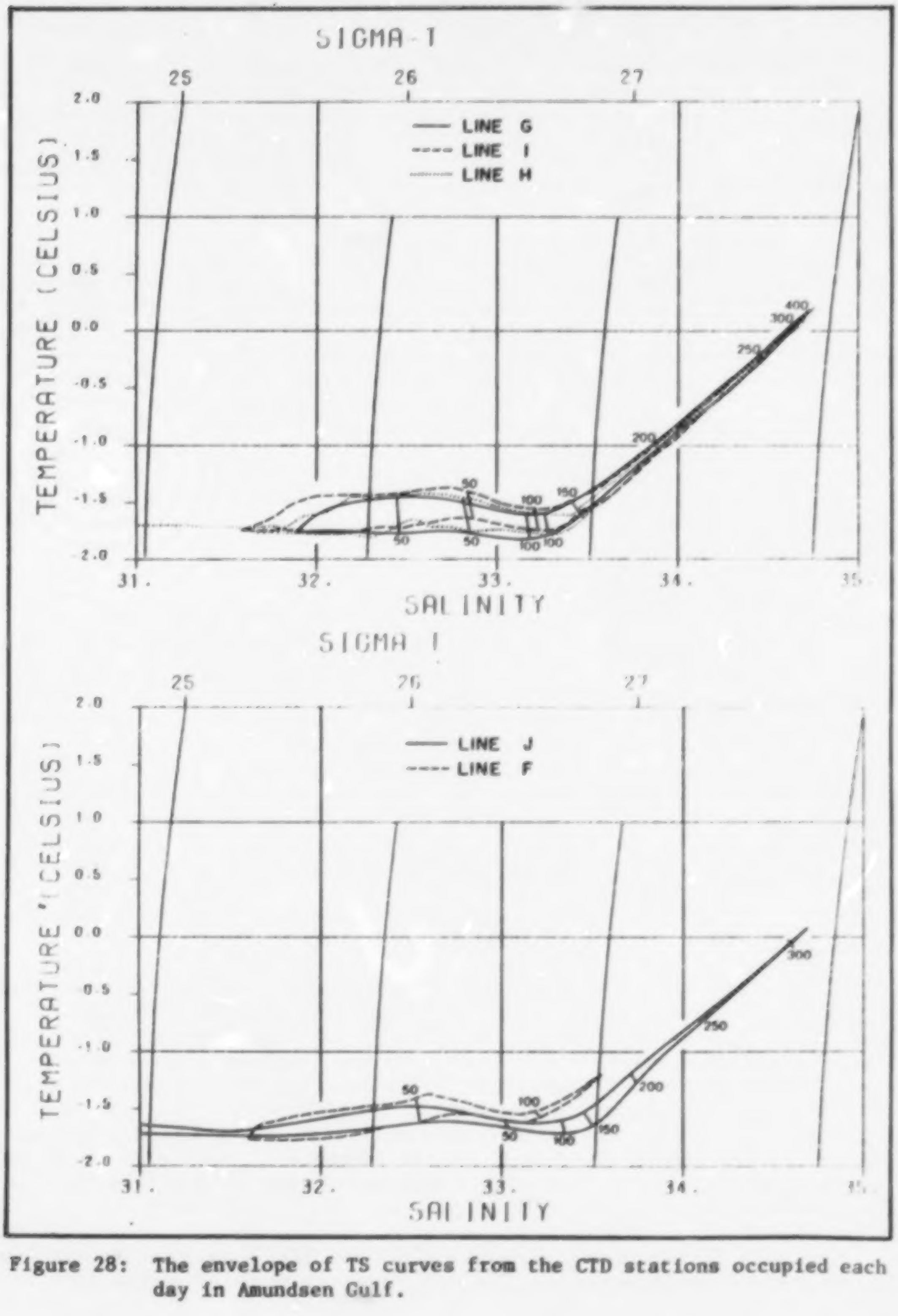


Figure 28: The envelope of TS curves from the CTD stations occupied each day in Amundsen Gulf.

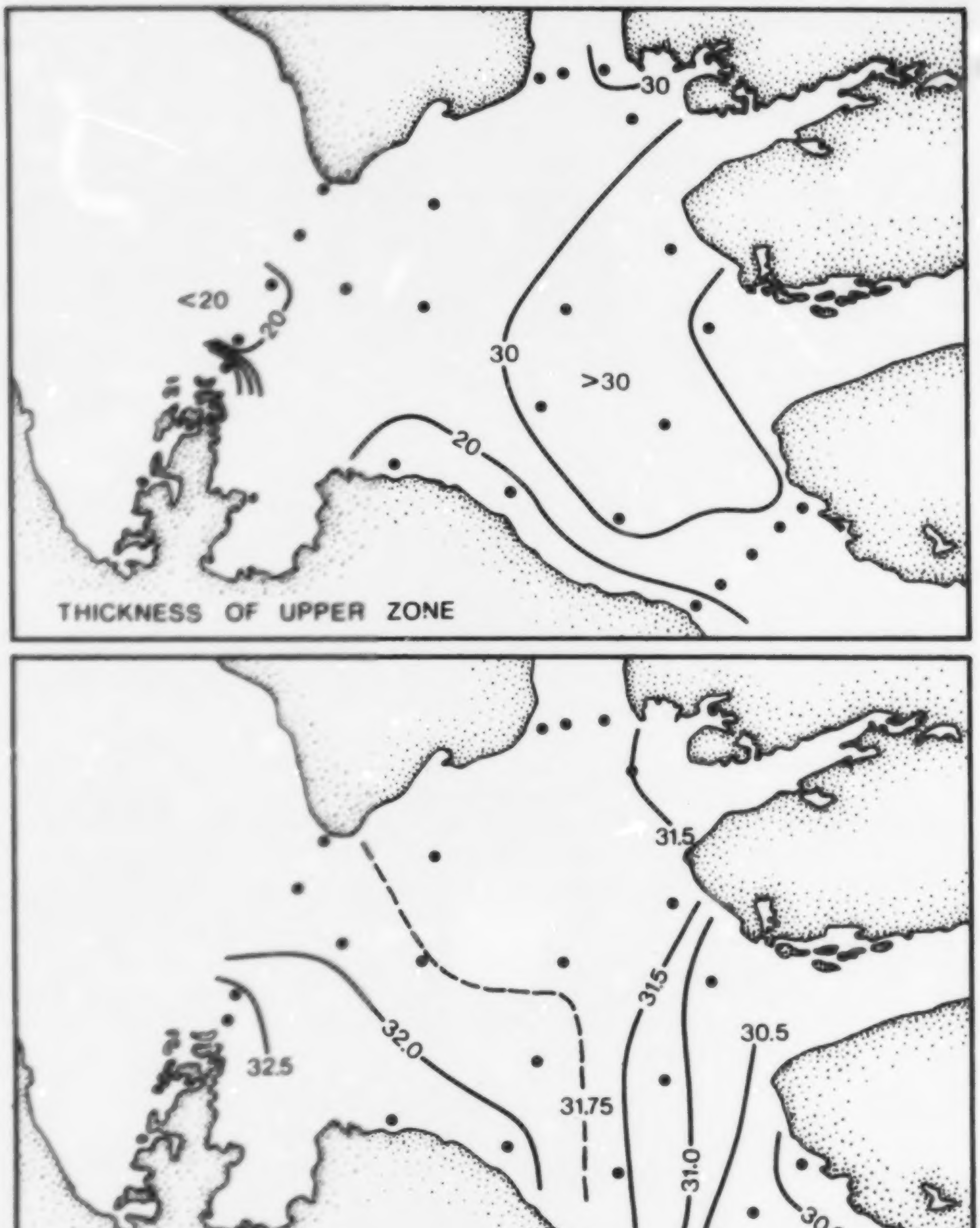

30
<20
20
30
>30
20
THICKNESS OF UPPER ZONE
31.5
32.0
32.5
31.75
31.5
31.0
30.5
30.0
SALINITY AT 5 DBARS

Figure 29: (upper) A map of the thickness of the upper zone sublayer in metres and (lower) the salinity at 5 dbar pressure in Amundsen Gulf.

near Cape Parry, to maximum levels of -1.39°C in the north central part of Amundsen Gulf at stations H2 and I1 (Figure 30), with a general tendency for warming of temperatures to the north and the east. The salinities associated with the peak temperatures were between 32.52 and 32.75 at most locations (Figure 30). This range of salinity is well above the values associated with the Pacific Water temperature maximum, suggesting that this feature may not be due to water originating in Bering Strait.

Beneath the temperature maximum layer, the temperatures tend to decrease with depth while the salinities continue to increase. At greater depths the temperature reaches a minimum value and then begins to increase along with salinity. Thus, a temperature minimum is found at all stations having sufficient depth. This feature represents the cold halocline layer evident in the TS diagrams for Amundsen Gulf (Figure 28). The layer is formed by a marked decrease in temperature beneath the temperature maximum layer and below by a marked increase in temperature where the transition zone to Atlantic Water begins. It typically occurred at depths of 75 m or less to a depth range of 110-165 m. The salinities through the cold halocline layer reach values of 33.35 to 33.52.

The temperature minimum feature, which forms the core of the cold halocline layer, varies significantly within the region (Figure 31). It is most pronounced or coldest on the south side of Amundsen Gulf, particularly near Cape Parry with temperatures of -1.75°C or less. On the northern side of Amundsen Gulf, near and to the east of Banks Island, the temperature minimum has values greater than -1.65°C with the warmest minima of -1.56°C occurring at stations F4 and F1 at the southern end of Prince of Wales Strait, and station I1 in northeastern Amundsen Gulf.

Comparisons of the TS characteristics of the cold halocline layer observed in the spring of 1982 (Figure 28) with the TS curves based on the summer 1977 data (Figure 32) suggest that the cold halocline is cooled over the winter. The summer 1977 data had temperatures of -1.5 to -1.3°C in this layer, as compared to a range of -1.75 to -1.5°C in the spring of 1982 (excluding the data of section F, across southern Prince of Wales Strait). Unfortunately, we cannot be certain that these changes occur seasonally rather than over other time scales, since no information was available for the summer of 1981. If these changes are seasonal, they indicate that the cooling is not occurring locally since the temperatures above the cold halocline layer are warmer in both spring and summer.

Below the cold halocline, both temperature and salinity increase with depth towards Atlantic Water Mass values. This transition layer is characterized by relatively large, positive gradients in both temperature and salinity. As indicated in the TS diagrams of the region (Figure 28), this layer exhibits small differences in the horizontal. Among the 15 CTD stations with sufficient water depths, the temperature at a salinity of 33.9 ranged from -1.09 (I6) to -0.98°C (G1). The corresponding range of pressures was 180 (I3) to 229 (J3).

A notable feature of the Amundsen Gulf TS curves is the straight line connecting the cold halocline layer and the Atlantic Water Mass. This suggests that the transition zone represents a mixing of the cold halocline layer with the Atlantic Water below. Such mixing could be occurring locally or elsewhere where the same water types are found.

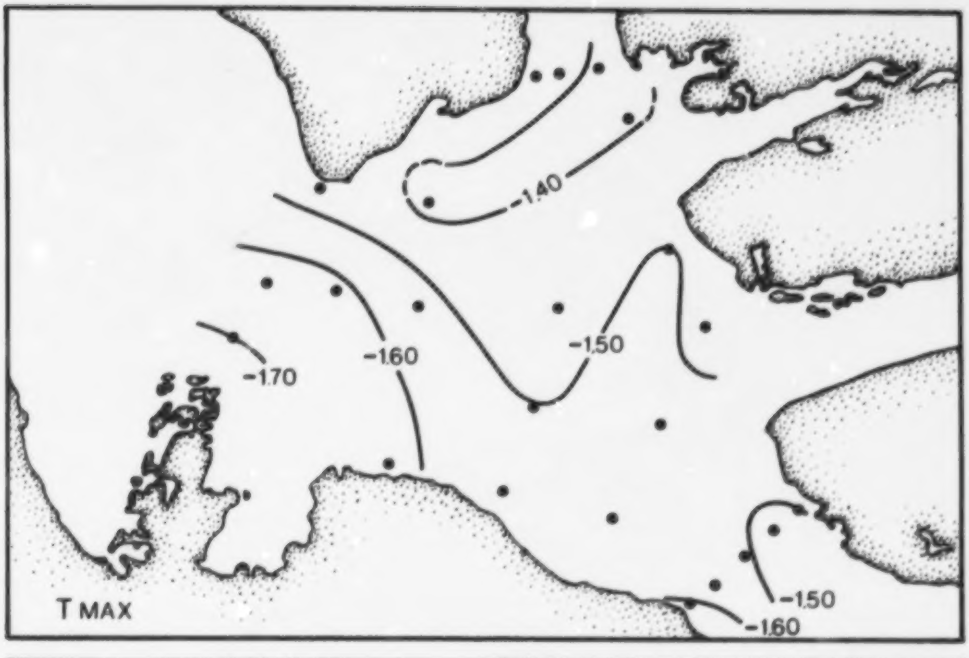

-1.40
-1.60
-1.50
-1.70
-1.50
-1.60
T MAX
32.5
32.5
<32.5
32.5
33.0
SALINITY OF T MAX

Figure 30: (upper) A map of the maximum temperature values and (lower) the corresponding salinity measurements in the temperature maximum sublayer of Amundsen Gulf.

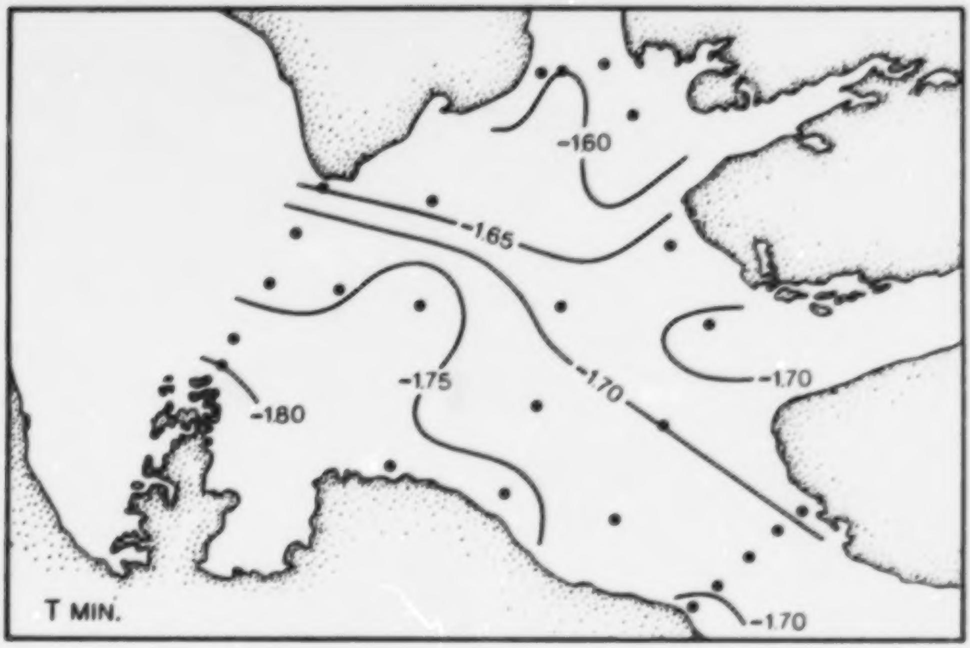

-160
-1.65
-1.70
-1.70
-1.75
-180
-1.70
T MIN.

Figure 31: A map of the minimum temperature observed in the cold halocline sublayer for each station in Amundsen Gulf.

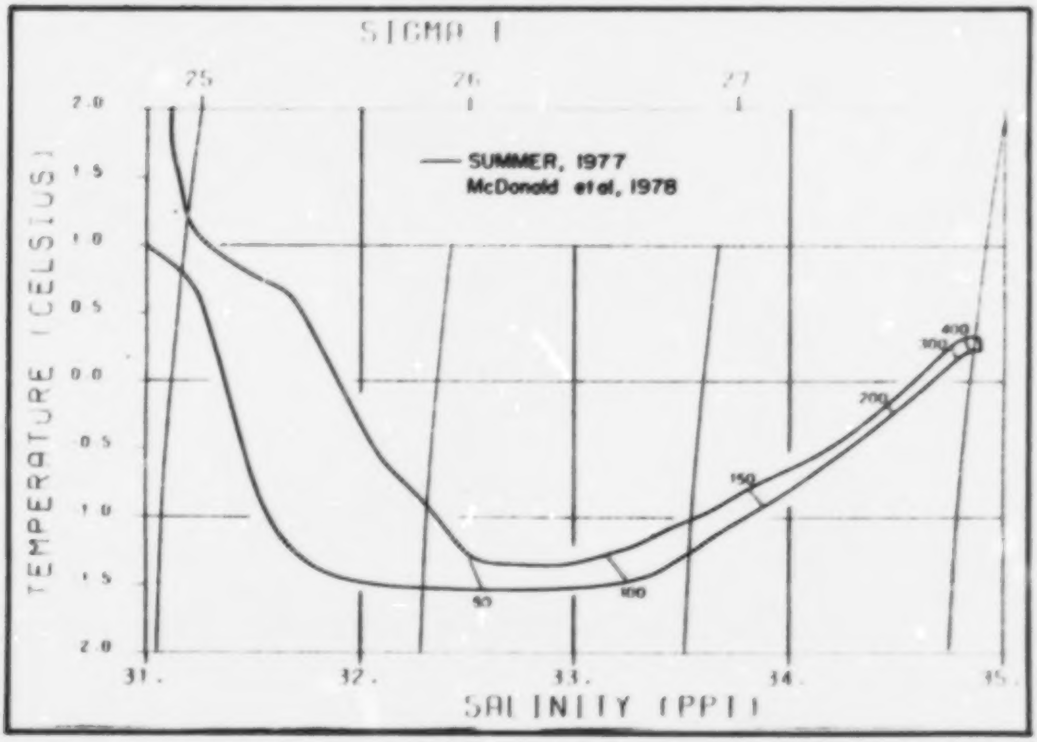


Figure 32: The envelope of TS curves for the summer 1977 data(Macdonald et al.,1978).

Temperatures above 0°C, characteristic of Atlantic Water occur at depths ranging from 263 (H4) to 311 m (J3). The corresponding salinities are 34.63. Within a few tens of metres of the 0.0° isotherm, the vertical gradients of temperature and salinity are continuously reduced with increasing depth. At depths greater than 300 to 350 m, the gradients are so small that the water properties below are virtually uniform. Depending on location, temperatures attain values of 0.17 to 0.22°C and salinities reach levels of 34.72 to 34.77 in the deep portion of the Atlantic Water Mass in Amundsen Gulf.

For similar depths in the adjacent areas of the Beaufort Sea, the temperatures and salinities are significantly higher. For example, at 400 m temperatures exceeding 0.30°C and salinities greater than 34.80 are commonly observed. By comparison, the vertical uniformity and reduced temperature and salinity levels in Amundsen Gulf beginning at depths of 300 to 350 m, are indicative of the presence of a sill with a comparable depth at the entrance to the Gulf.

Small-Scale Temperature Bands

At most stations in Amundsen Gulf, a considerable degree of smaller-scale, vertical temperature variability occurred. The temperature variations were most prominent in the cold halocline layer but were also observed within the temperature maximum layer and in the upper portion of the transition zone layer, although rarely at depths exceeding 200 m. The most prominent variations occurred as bands of colder water within the water column. The temperature bands have vertical scales ranging from a metre or less up to 25 m but are commonly of 5 to 10 m thickness. They are characterized as reductions of temperature by 0.03 to 0.10C° from the water above and below (Figure 33).

Melling and Lewis (1982) observed similar features over the nearby continental shelf bordering the southeastern Beaufort Sea in November, 1979, explaining them as the result of freezing of surface waters. As ice formed, cold, saline water was generated which would descend within the water column until encountering its density value.

An attempt was made at determining the horizontal scales of these temperature bands for the spring 1982 data. Four bands were identified on the basis of their prominence in some of their temperature profiles. A search was made of all of the Amundsen Gulf CTD data, to see if features similar to these bands occurred at the appropriate salinities and depths. The results, presented in Figure 33 are ambiguous since the presence of vertical temperature variations throughout the profiles make positive identification difficult. Similar temperature bands are present at many of the stations, but whether these represent the same band is not clear. Given the small vertical scale of these features and the very large horizontal distances between stations, advection and mixing could well account for the difficulty in tracing the temperature bands among the various measurement sites.

The reduction in the amplitude and the number of small-scale features in the northeastern part of Amundsen Gulf suggests that this area may be further from the source than other parts of the Gulf. The degree of cooling in the individual temperature bands tends to decrease from the west to the east and to the north: the coldest bands are found on the southern half of the Gulf and tend to be cooler to the west. This pattern suggests that the cold temperature bands may be originating in the southwestern part of Amundsen

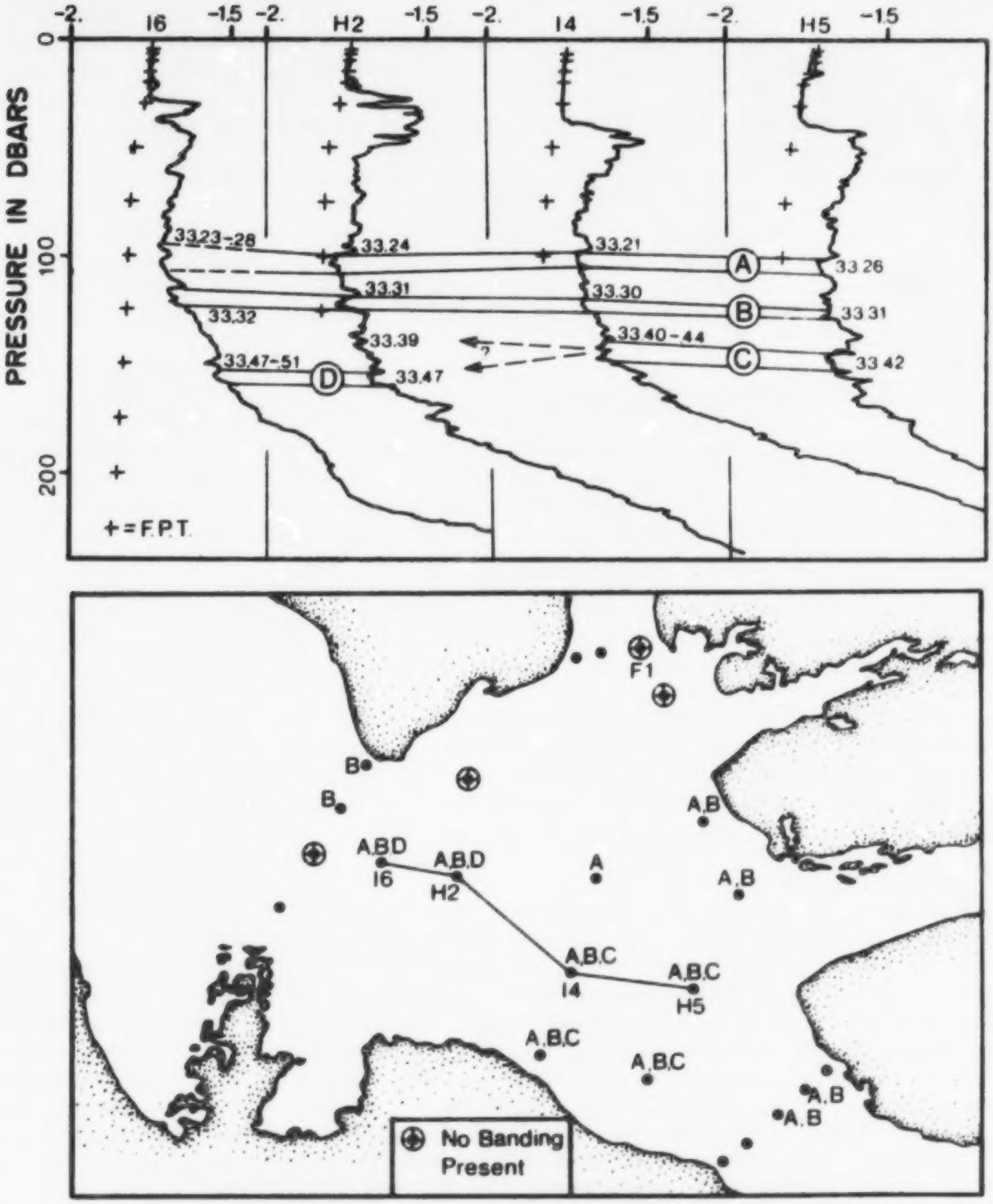


Figure 33: (upper) Examples of cold temperature bands observed between 0 and 200 dbar. The crosses indicate surface freezing point temperatures. (lower) A map of the stations in Amundsen Gulf at which temperature bands occurred. The letter(s) beside the station location indicate the presence of one or more of the four distinct bands identified above.

Gulf. Alternatively, they may enter the Gulf from this sector, likely from the adjacent continental shelf of the Beaufort Sea.

The horizontal distribution pattern of the cold temperature band also occurs in the distribution of water properties in the upper zone, temperature maximum and cold halocline layers. The pattern appears as a tendency for changes to occur eastward and northward of Cape Parry. Such trends are evident in the decrease of salinity at 5 dbar (Figure 29), the warming of temperature at the core of the temperature maximum layer (Figure 30) and the increase of temperature at the core of the cold halocline layer (Figure 31). These horizontal distributions suggest that the cold, saline water found near Cape Parry may have been advected eastward and northward within Amundsen Gulf. Such a flow pattern would account for the presence of a cold halocline layer lying beneath a temperature maximum, which is difficult to explain by local vertical processes.

Vertical Sections and Geostrophic Velocities

The geostrophic velocities computed from the 1982 CTD obtained in Amundsen Gulf and adjoining areas are subject to additional uncertainties due to the calibration uncertainties in the conductivity data (see Appendix A). For the bulk of the data, consisting of stations with depths of 225 m or more, the applied correction procedures should limit the additional uncertainties in geostrophic velocity to ±1.2 cm/s or less for a typical station spacing of 50 km at 10 dbar relative to 300 dbar and ±0.4 cm/s or less at 10 dbar relative to 100 dbar. The uncertainties in geostrophic velocity are larger using data from those stations with depths of 170 to 225 m (G4, J1 and J4). For station pair G4-G3, the uncertainty for geostrophic velocities at 10 dbar relative to 100 and 300 dbar amount to ±1.9 and ±6.2 cm/s, respectively. The largest uncertainties in the numerical results presented below are for the closely spaced data of transect J, with an average station separation of 18 km. Data at stations J1 and J4 have the largest uncertainties, while the data of stations J2 and J3, extending to depths in excess of 225 m, are less uncertain. (Station J5 was not used because it was too shallow.) The etimated uncertainties in the geostrophic velocity of 10 dbar relative to 100 dbar and to 300 dbar are ±7.8 and ±8.9 cm/s for station pairs J1-J2 and J3-J4 and ±0.9 and ±2.6 cm/s for station pair J2-J3, respectively. For stations with maximum depths of 170 m or less (G5, I1, H3, J5, F1, F3 and F4), the uncertainties in the geostrophic velocities are expected to be larger and should be used with considerable caution.

Temperature and salinity distributions were prepared for three vertical cross sections: at the March 29 CTD stations of line G from Cape Parry to Cape Lambton (Figure 34), the April 1 CTD stations of line J across the entrance to the Dolphin and Union Strait (Figure 35) and a line of stations west along the east-west axis of Amundsen Gulf (Figure 36). The latter vertical cross section was constructed from data obtained over a three-day period, March 29-31.

Across western Amundsen Gulf (Figure 34) salinities decreased and temperatures increased markedly, from the south side to the central part of the Gulf, over the uppermost 150 m of the water column. The same trend continues to the north side but with a lesser gradient and only at depths of 50 m or less. At greater depths, the northern side of this section is characterized by increases in both salinity and temperature to depths near

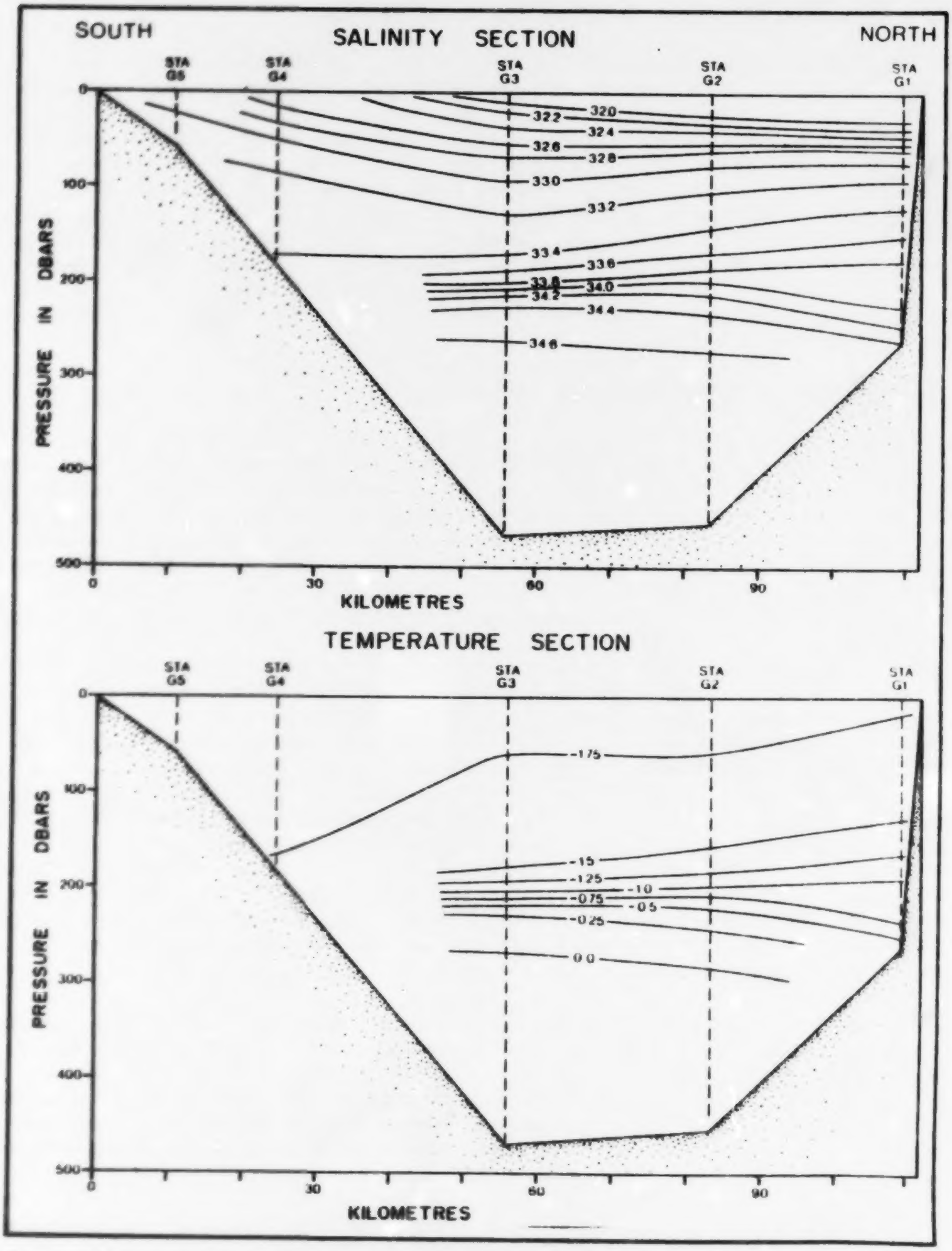


Figure 34: The temperature and salinity distribution through a vertical cross section of Amundsen Gulf (line G) from Cape Parry to Cape Lambton.

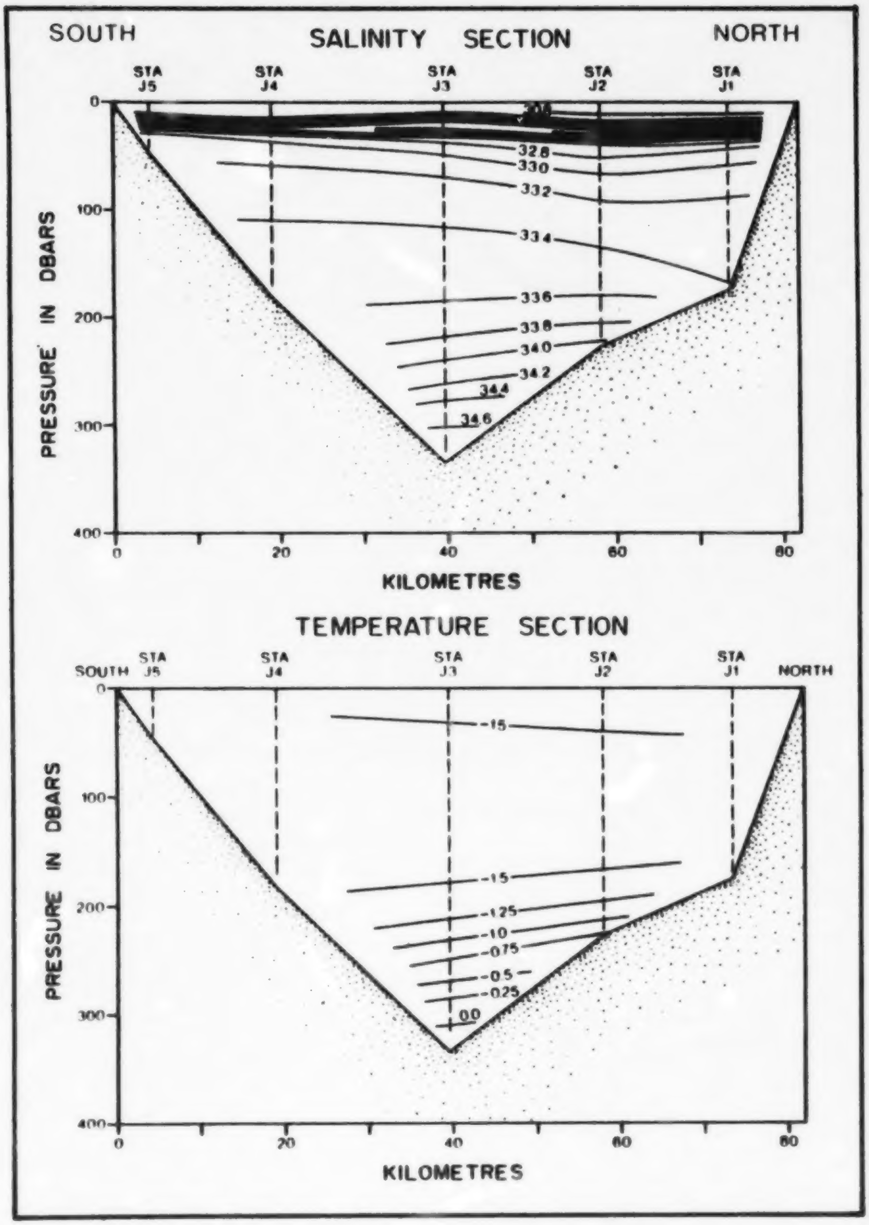


Figure 35: The temperature and salinity distribution through a vertical cross section of western Dolphin and Union Strait (line J).

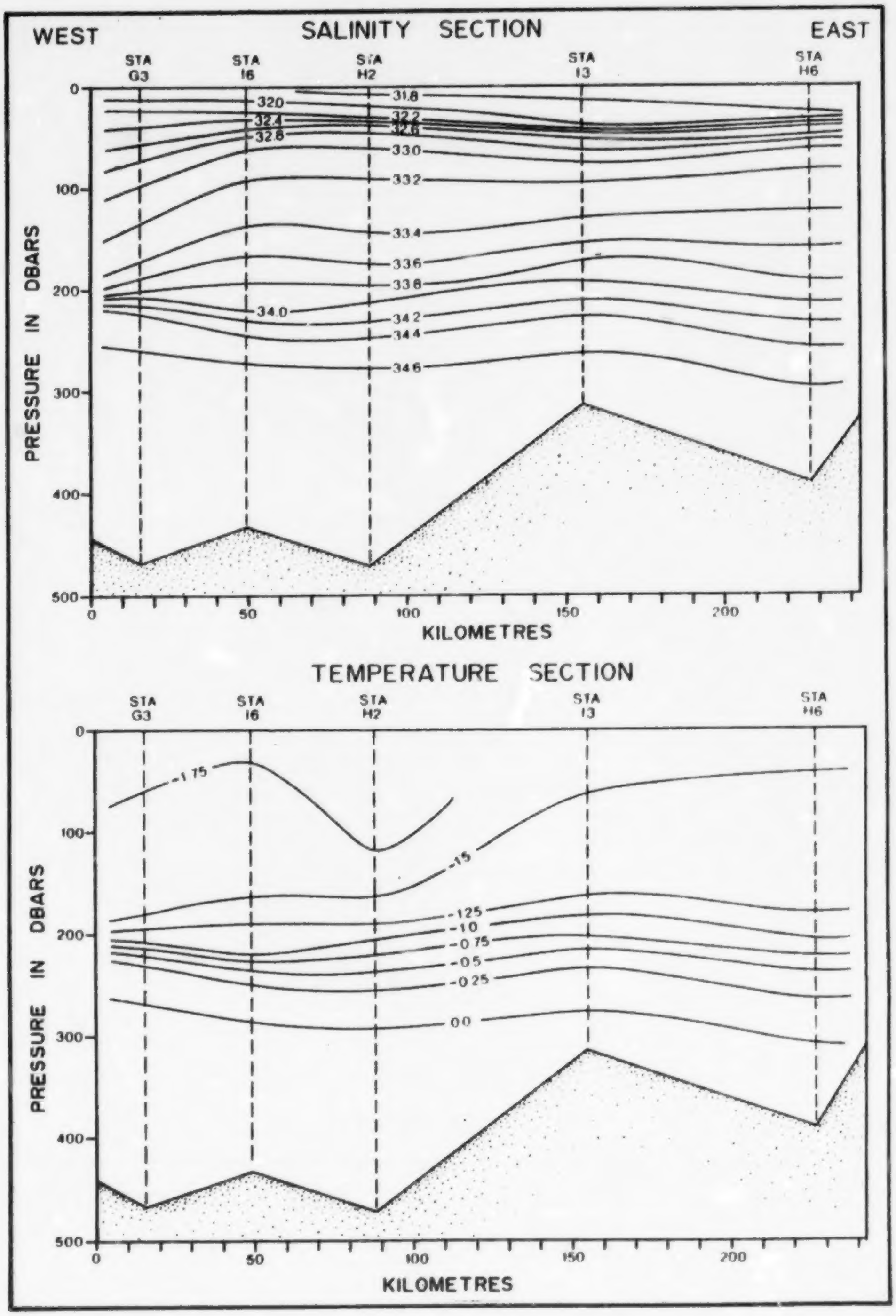


Figure 36: The temperature and salinity distribution through a vertical cross section along the east-west axis of Amundsen Gulf (stations G3, I6, H2, I5, H5).

200 m. Below this level, the direction of the gradient reverses again, with decreases in temperature and salinity from the middle to the northern side. The reversal of the gradients at depths near 200 m results from the reduced increase of temperature and salinity with depth at station G1 at these depths as compared to the intensity of vertical gradients at stations G3 and G2.

The geostrophic flows computed for the southern half of section G are consistently westward out of Amundsen Gulf. The currents at 10 bar relative to 50 dbar amount to 3.4 cm/s between stations G4 and G3. (For station pair G5-G4, the geostrophic flow is 4.6 cm/s westward, although this value is less reliable due to the uncertainties in the salinity data of station G5, as discussed above.) On the north side of the section, the geostrophic flows are generally smaller and more variable. Between stations G3 and G2, the geostrophic current is nearly constant at depths greater than 200 m to near the bottom of 400 m. The flow at 10 dbar relative to 400 dbar amounts to 3.6 cm/s eastward into the Gulf. At the northernmost pair of stations, G2 and G1, the profile of geostrophic currents reveal considerable variability with depth. From 20 m downwards to 140 m, the current profile is directed more easterly with a maximum at 75 m. Below this level, down to 225 m, a minimum or more westerly directed current core at 200 m occurs, with a strong change towards easterly currents from 200 to 250 m. While absolute velocities are difficult to estimate, due to the reversals in the current profile, the upper limit of the geostrophic current is limited to 2 cm/s, the difference between the easterly and westerly cores.

The cross section through the entrance to Dolphin and Union Strait (Figure 35), reveals a general decrease in salinity, from south to north over most of the Strait at depths less than 200 m. At greater depths, observations are limited to stations J3 and J2, where salinity and temperature increased from south to north.

The dominant flow above the 175 m level appears to be westerly into Amundsen Gulf. For station pairs J3-J2 and J2-J1, the flow at 10 dbar relative to 175 dbar is 12.5 cm/s and 3.0 cm/s both westerly. A weak easterly flow of 0.9 cm/s is indicated between station pairs J4-J3 for 10 dbar relative to 175 dbar, but at depths from 15 to 75 dbar a weak westerly flow of 0.5 to 1.1 cm/s is indicated.

Across the southern entrance to Prince of Wales Strait (line F), the horizontal gradients in salinity and temperature are generally weak. An overall increase in salinity from west to east is evident, suggestive of a net southerly flow, with magnitudes of the order of 2 cm/s or less.

The east-west distribution of water properties through Amundsen Gulf (Figure 36) is characterized by relatively large gradients in salinity near the Cape Parry-Cape Lambton constriction in the west with weaker gradients through the eastern part of the Gulf. Between stations G3 and I6, the salinities increase markedly from west to east at depths of 200 m or less. Proceeding further east, the salinities show a gradual decrease to station I3 and then increase towards station H6.

A strong southward geostrophic flow of 6.6 cm/s (10/200 dbar) results from the relatively large gradient in salinity between station G3 and I6. Through the remainder of the east-west line of stations, geostrophic velocities are much smaller with magnitudes of 2.0 cm/s or less.

The near-surface geostrophic circulation of Amundsen Gulf is indicated by the map of dynamic height anomalies at 10 dbar relative to 300 dbar (Figure 38). At stations where the maximum pressure was less than 300 dbar but exceeded 175 dbar, the Jacobsen-Jensen method (Sverdrup, Johnson and Fleming, 1942) was applied to extrapolate the data to 300 dbar. The near-surface geostrophic circulation patterns are dominated by a clockwise gyre-like feature in western Amundsen Gulf, where the southward flow between stations G3 and I6 turns westward north of Cape Parry. This geostrophic current, having a magnitude of approximately 4 cm/s, appears to represent a convergence of an easterly inflow on the northern portion of the line G and water flowing southwestwards along the eastern Banks Island coastline. This latter current branches between the current pattern described above and a westerly coastal flow past Cape Lambton. The other notable near-surface circulation feature is the northwestward geostrophic flow found in Dolphin and Union Strait. This flow is concentrated between stations J3 and J2 with a magnitude of 10 cm/s.

The near-surface geostrophic velocities over the central portion of Amundsen Gulf are uniformly weak, with magnitudes of 1 cm/s or less. There appears to be a weak northerly flow on the eastern side of the Gulf, possibly associated with the northwesterly inflow from Dolphin and Union Strait.

An examination of the geostrophic velocity profiles at the deeper station pairs within the central basin of Amundsen Gulf (Figure 38) indicates that geostrophic currents are stronger at pressure of 50 to 150 dbar than at 10 dbar, relative to 300 dbar reference level. At depths of less than 50 dbar, the sign of geostrophic velocity shear is the opposite of the shears at depths greater than 100 to 150 dbar, resulting in reduced velocities at 10 dbar relative to the deep water levels.

The geostrophic flow patterns at 100 dbar relative to the 300 dbar (Figure 37), indicate stronger flows than the corresponding values at the 10 dbar level within the central part of Amundsen Gulf. The circulation follows a broad cyclonic flow pattern around the cental station, I3, with magnitudes of 1.0 to 2.0 cm/s.

The spring circulation patterns differ from those of the summer within the upper 100 m of the water column, being much reduced in magnitude. Lemon (1982) found that the geostrophic surface currents relative to 300 dbar in the summer 1977 data of Macdonald et al. (1978) indicated a strong outflow (15-30 cm/s) on the southern side of western Amundsen Gulf, between Cape Parry and Cape Bathurst. Within the central portion of the Gulf, the same cyclonic flow pattern is evident, but the calculated speeds of close to 10 cm/s are an order of magnitude greater than observed in the spring of 1982.

Better agreement is found between the spring and summer geostrophic circulation at depths of 100 m or greater. In the summer 1977 results, the cyclonic flow pattern occurs but with speeds of a few centimetres per second, only slightly greater than those observed in the spring. As well, the strong summer outflow in western Amundsen Gulf appears to be concentrated in the

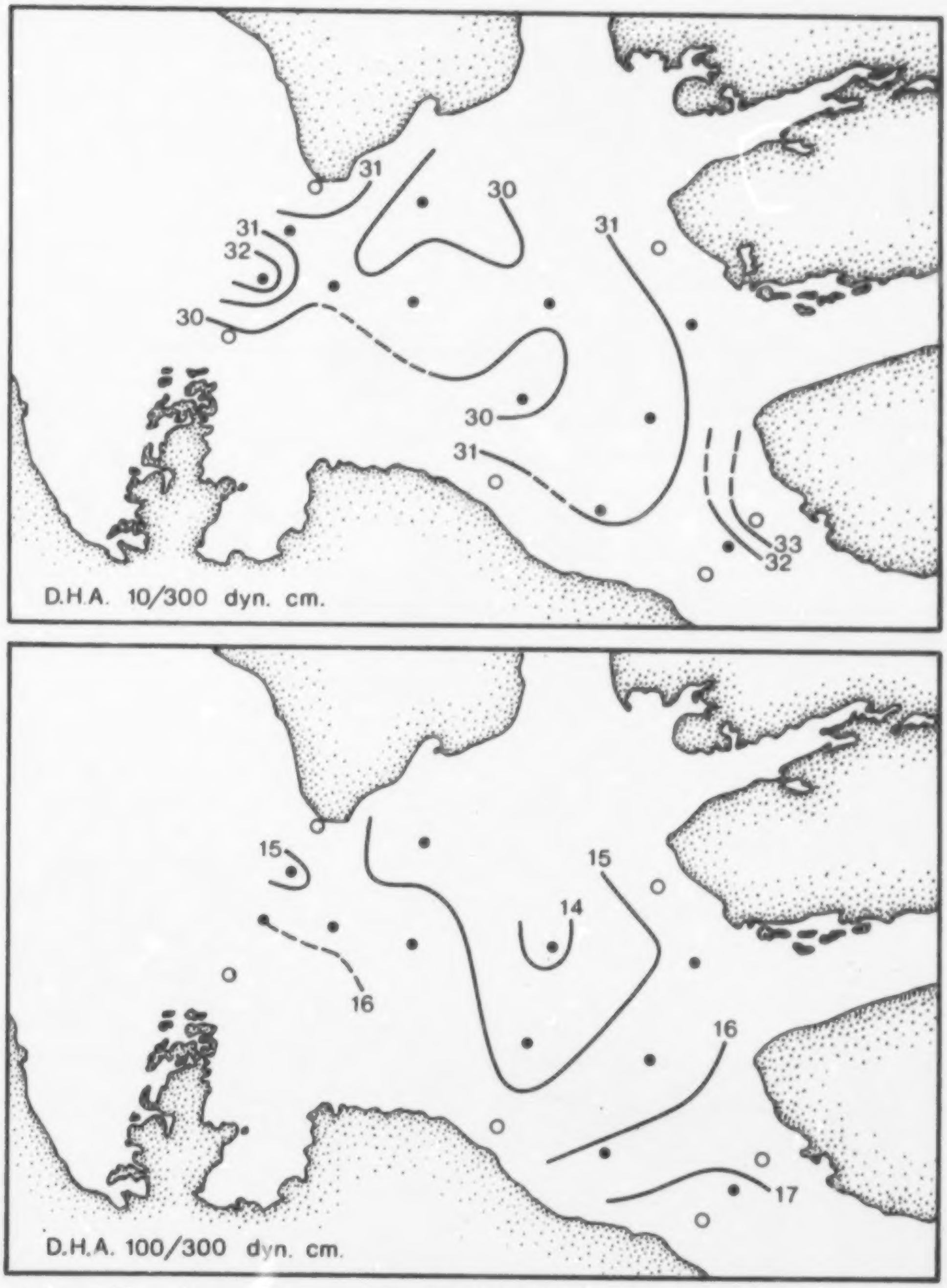

31
31
32
30
30
31
30
31
33
32
D.H.A. 10/300 dyn. cm.
15
15
14
16
16
17
D.H.A. 100/300 dyn. cm.

Figure 37: (upper) A map of the dynamic height anomaly in dynamic centimetres in Amundsen Gulf, at 10 dbar relative to 300 dbar, and (lower) at 100 dbar relative to 300 dbar. The data at stations indicated by open circles were extrapolated to 300 dbar.

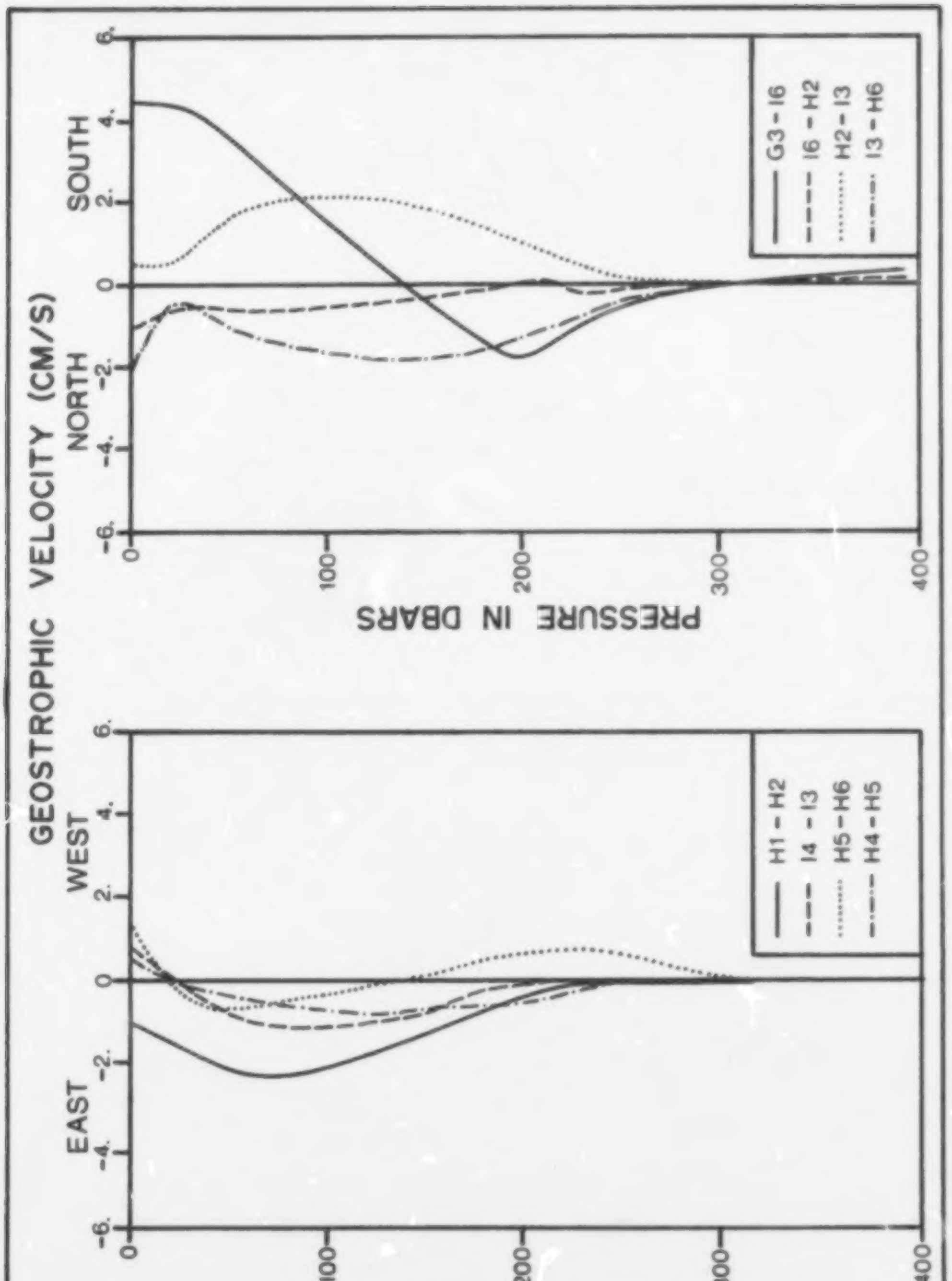


Figure 33: Geostrophic current profiles for selected station pairs in Amundsen Gulf.

upper 100 m and is reduced to values of 2 cm/s at depths of 200 m or more. It appears then, that the near-surface spring circulation is substantially reduced due to seasonal changes in the water column. However, at depths of 100 m or greater, these changes are diminished and the circulation patterns and magnitudes are in better agreement.

The relatively strong westward geostrophic flow in the upper 100 m of the water column relative to 300 dbar computed for station pairs north of Cape Parry (G5 and G4; G4 and G3) appears to be inconsistent with the eastward advection expected on the basis of the horizontal distribution of water properties in the upper zone and the temperature maximum layer. This apparent contradiction may simply reflect a temporal change in the advection patterns, with the inflow north of Cape Parry having taken place prior to the observation period.

5.5 LANCASTER SOUND AND PRINCE REGENT INLET (SECTIONS L AND M)

Six CTD stations were occupied across western Lancaster Sound on March 21. Fifteen days later another line of 6 CTD stations were taken across Prince Regent Inlet (Figure 39). The data from these two transects are presented together as Prince Regent Inlet forms a relatively deep extension of Lancaster Sound. The other adjacent channels, Barrow Strait and Wellington Channel, are both much shallower than Prince Regent Inlet.

The oceanographic data collected in the present study are, to our knowledge, the first such data collected through the ice in western Lancaster Sound and Prince Regent Inlet. For the purposes of studying longer-term variability in water properties, comparisons were made with CTD data collected in August and September, 1979 (Lemon, 1980) at the locations shown in Figure 39.

Temperature-Salinity Characteristics

The envelope of the TS curves for transects L and M are presented in Figure 40, along with the TS curves of the summer 1979 CTD data.

A considerable degree of variability was present in the water mass characteristics among the stations of the spring 1982 transects in Lancaster Sound and Prince Regent Inlet. This is evident from the scatter of the individual TS curves for each daily transect, as well as in different characteristics of water mass layers.

The upper zone layer, though present in all of the CTD profiles, revealed significant differences among the measurement locations. On transect N in western Lancaster Sound, the upper zone was characterized by vertically uniform temperatures and salinities. The depth of the upper zone was relatively large at stations N3 and N6 with values of 45 and 43 m, respectively. The northernmost stations, N1 and N2, had relatively shallow upper zones of 22 and 29 m while the shallowest upper zones were found at stations N4 (20 m), and N5 (17 m). Upper zone salinities vary more consistently across the Sound, from larger values on the north side to smaller values on the south side (Figure 42).

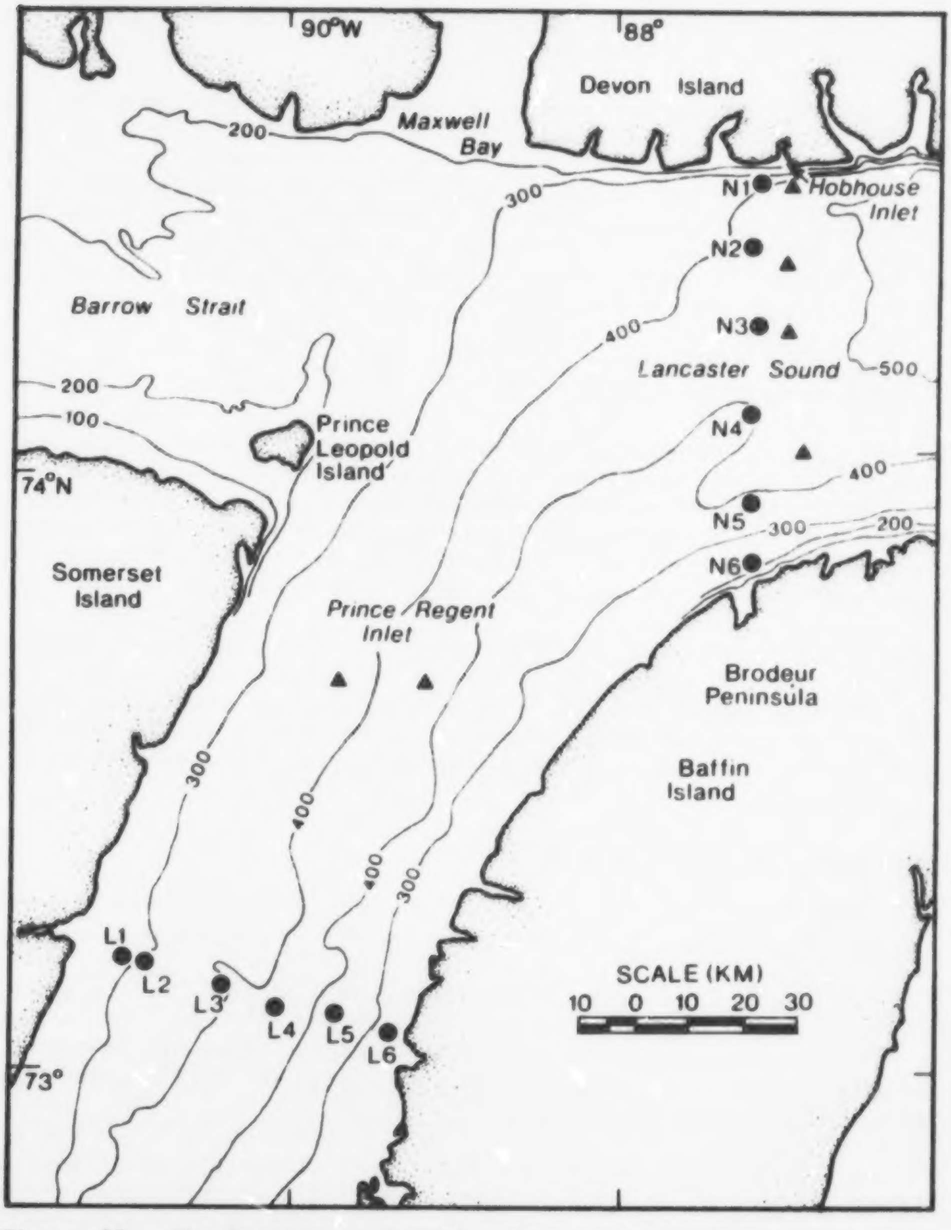

90°W
88°
Devon Island
Maxwell Bay
200
300
N1
Hobhouse Inlet
N2
Barrow Strait
400
N3
Lancaster Sound
500
200
100
Prince Leopold Island
N4
74°N
400
N5
300
200
N6
Somerset Island
Prince Regent Inlet
Brodeur Peninsula
Baffin Island
300
400
400
300
L1
L2
L3
L4
L5
L6
SCALE (KM)
10 0 10 20 30
73°

Figure 39: The locations of CTD stations across western Lancaster Sound on March 21, and across Prince Regent Inlet on April 5, 1982. Also shown, as triangles, are the sites of CTD stations occupied in the summer of 1979.

In Prince Regent Inlet, the upper zone is characterized by vertically uniform, near-freezing point temperatures. The salinities are uniform, as well, at some stations (L4 and L5) but increase at other locations. For the latter cases, at two of the measurements locations (L2 and L3) a pronounced halocline occurred over a 10 m depth range in the upper zone, while at stations L1 and L6 the salinity gradient was small and nearly constant throughout the upper zone. The depth of the upper zone decreased from west to east, from 70 m (L1) to 50 m (L4), decreasing abruptly to 25 m at station L6. Near-surface salinities (5 dbar) followed the same general trend decreasing from 32.70 at the westernmost station, L1, to values of 32.14 to 32.16 at the easternmost stations, L4 to L6.

A temperature maximum layer is found at some but not all of the stations. Even at those stations where it does occur, it has markedly different forms. This feature is generally more prominent in Lancaster Sound than Prince Regent Inlet. The most developed temperature maximum is found at station N1 in northern Lancaster Sound over depths of 30 to 90 m with a maximum temperature of -1.48°C. At the other stations on transect N, the temperature maximum occurs at greater depths or in the case of station N5, is not present at all. At station N4, the temperature maximum is found from 75 to 125 m depth with a maximum temperature of -1.44°C. At stations N2, N3 and N6, a series of thin temperature maxima occurs alternating with bands of relatively cold water forming temperature minima from 50 to 150 m. Typical thicknesses of these alternating bands range from 5 to 30 m, with peak-to-peak temperature variations varying from 0.05 to 0.25C°. Finally, at station N5, no temperature maximum occurs; the temperature remain relatively cold, within 0.10C° of the freezing point temperatures to a depth of 120 m, where the temperature increases abruptly by about 0.3C°.

In Prince Regent Inlet, temperature maxima are much less prominent. Such features are present at stations L1 and L2 on the western side of the transect as weak maxima at depths from 75 to 125 m. At the central stations, L3 and L4, the maxima are even smaller in amplitude and occur as a number of relatively thin (5 to 10 m) bands of warmer layers superimposed on the generally colder water column. No temperature maxima are found at the easternmost stations, L5 and L6. At these locations, the temperature monotonically increases beneath the upper zone through the remainder of the water column.

Over the middle portion of the water column at depths of approximately 100 to 300 m, the vertical profiles in Lancaster Sound suggest a considerable degree of interleaving of distinctly different water mass characteristics. On the north side of the Sound at station N1, a cold halocline layer occurs from 95 to 175 m, with temperatures of -1.76 to -1.62°C and salinities which increase from 33.33 to 33.48. This cold layer is not present at the two southernmost stations (N5 and N6), where temperatures rise to -1.5°C at 125 m and 100 m, respectively, gradually increasing by approximately 0.15C° to depths of 175 to 200 m. At each of the central stations (N2, N3 and N4), the temperatures reflect the influence of the water masses observed at each end of the section, as a series of temperature maxima and minima. The vertical scales associated with these features vary from a few metres up to 25 to 30 m. Because the temperature maxima and minima are quite irregular in their vertical separation from one station to the next, their horizontal scale is clearly less than the station separation of approximately 15 km.

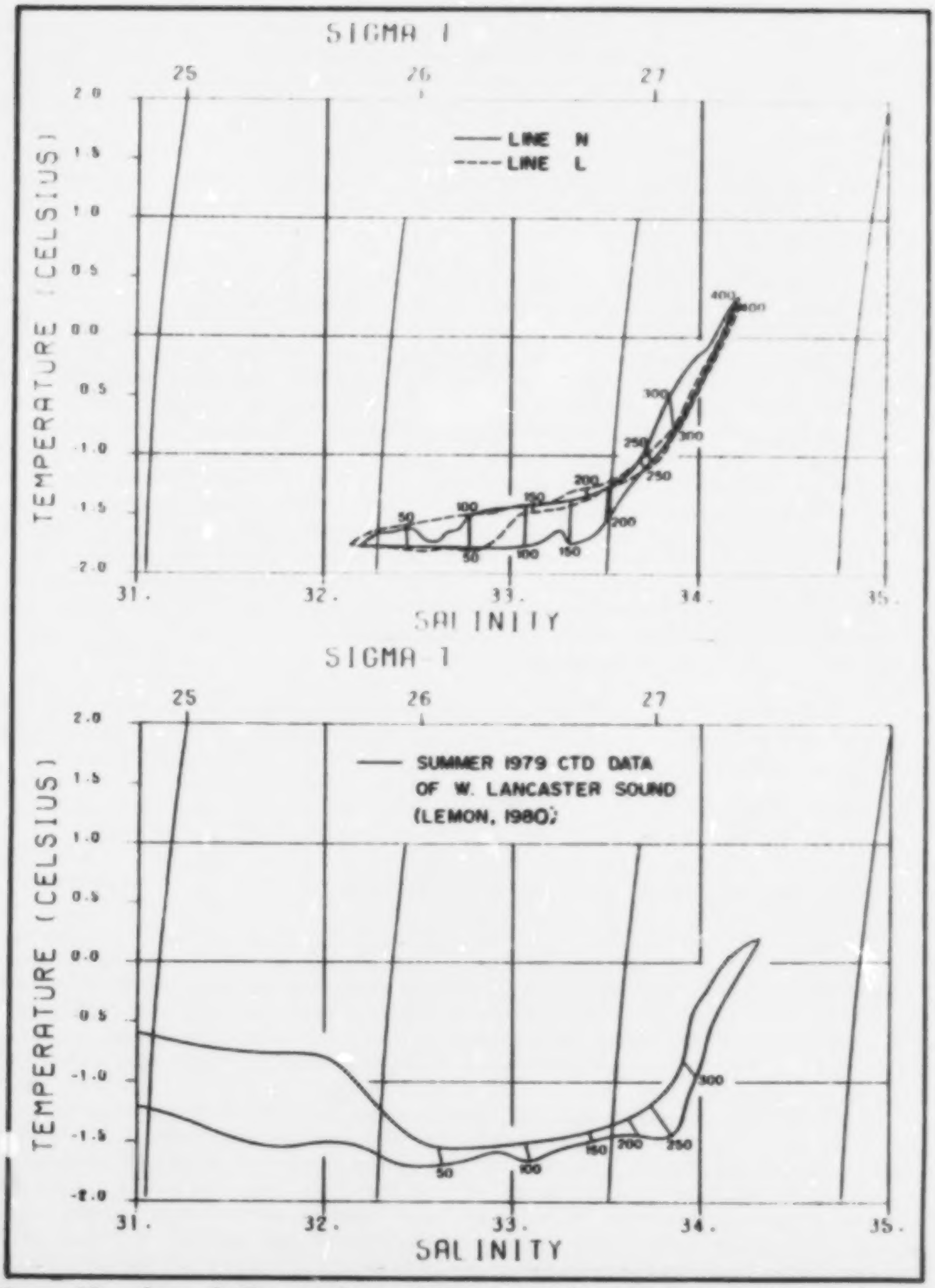


Figure 40: (upper) The envelope of TS curves for stations on line N (western Lancaster Sound) and on line L (Prince Regent Inlet). (lower) The envelope of TS curves for CTD stations of western Lancaster Sound and northern Prince Regent Inlet occupied in the summer of 1979.

At depths between 175 and 225 m, the average temperature gradient becomes larger, resulting in the upward turn observed in the TS curves (Figure 40). From these depths to well over 350 m, the temperatures and salinities increase to those of Baffin Bay Atlantic Water. Even at these depths a considerable variability is found in the horizontal and vertical. For salinities ranging from 33.75 to 34.05 (corresponding to depths of 250 to 350 m), the temperatures vary by 0.2 to 0.3C° among TS curves of the line N CTD stations. Station N1 exhibits anomalously high temperatures and stations N2 and N6 reveal unusually low temperatures within this salinity range. Even within a CTD profile, significant smaller scale temperature variations appear. These are most pronounced at stations N2, N3 and N4 where, at depths of 280 to 330 m, temperature maxima and minima occur with amplitudes of up to 0.25C° and vertical scales of 5 to 30 m.

In Prince Regent Inlet, the middle portion of the water column exhibits somewhat less variability than found in western Lancaster Sound. None of the stations has a well-defined, cold halocline layer. Rather from depths of about 100 m, the temperature tends to increase relatively slowly until depths near 275 m, where the temperature gradient increases substantially. However, throughout these two thermocline regions, the temperature profile at most stations exhibits many small scale features. These small scale features tend to be largest on the western side of the Inlet, particularly at stations L2 and L3.

The TS characteristics of the CTD stations in Prince Regent Inlet show much less scatter than was the case for western Lancaster Sound at salinities exceeding 33.4, corresponding to depths of about 150 m. The envelope of Prince Regent Inlet TS curves follows those of the southernmost stations of Lancaster Sound at salinities of 33.0 to 33.65 (depths of 150 to 240 m). For salinities of 33.65 to 34.0, the TS curves in Prince Regent Inlet tend to be displaced towards lower temperatures and higher salinities than those of most stations in Lancaster Sound, although agreement does occur with portions of the TS curves from stations N2 and N6. At salinities greater than 34.0 (depths of 310 to 350 m), good agreement is found among the TS characteristics of the Prince Regent Inlet and Lancaster Sound data.

At all stations with depths in excess of 300 to 350 m, Baffin Bay Atlantic Water occupies the bottom part of the water column. The TS characteristics of this water mass are nearly identical among the measurement locations. The warmest Baffin Bay Atlantic Water is found at station N3 at 414 dbar, with a temperature of 0.32°C and salinity of 34.22. On transect L across Prince Regent Inlet, the warmest water occurs at station L4, at 450 dbar or greater with a temperature of 0.29°C and a salinity of 34.22.

A comparison of the spring 1982 CTD data with that obtained in the summer of 1979 (Figure 40) reveals large differences in the TS characteristics at depths greater than 200 m. The summer 1979 data had consistently higher salinities and/or lower temperatures than the spring 1982 data. The differences amount to 0.1 in terms of salinities or 0.2C° for temperatures, at depths below 300 m. At depths of 200 to 300 m, the differences are even larger. This comparison suggests that large changes occur in the water mass characteristics of western Lancaster Sound, even in the deepest portions of the water column. Without further winter or spring CTD data, it is not possible to determine if these changes are seasonal or occur over other time scales.

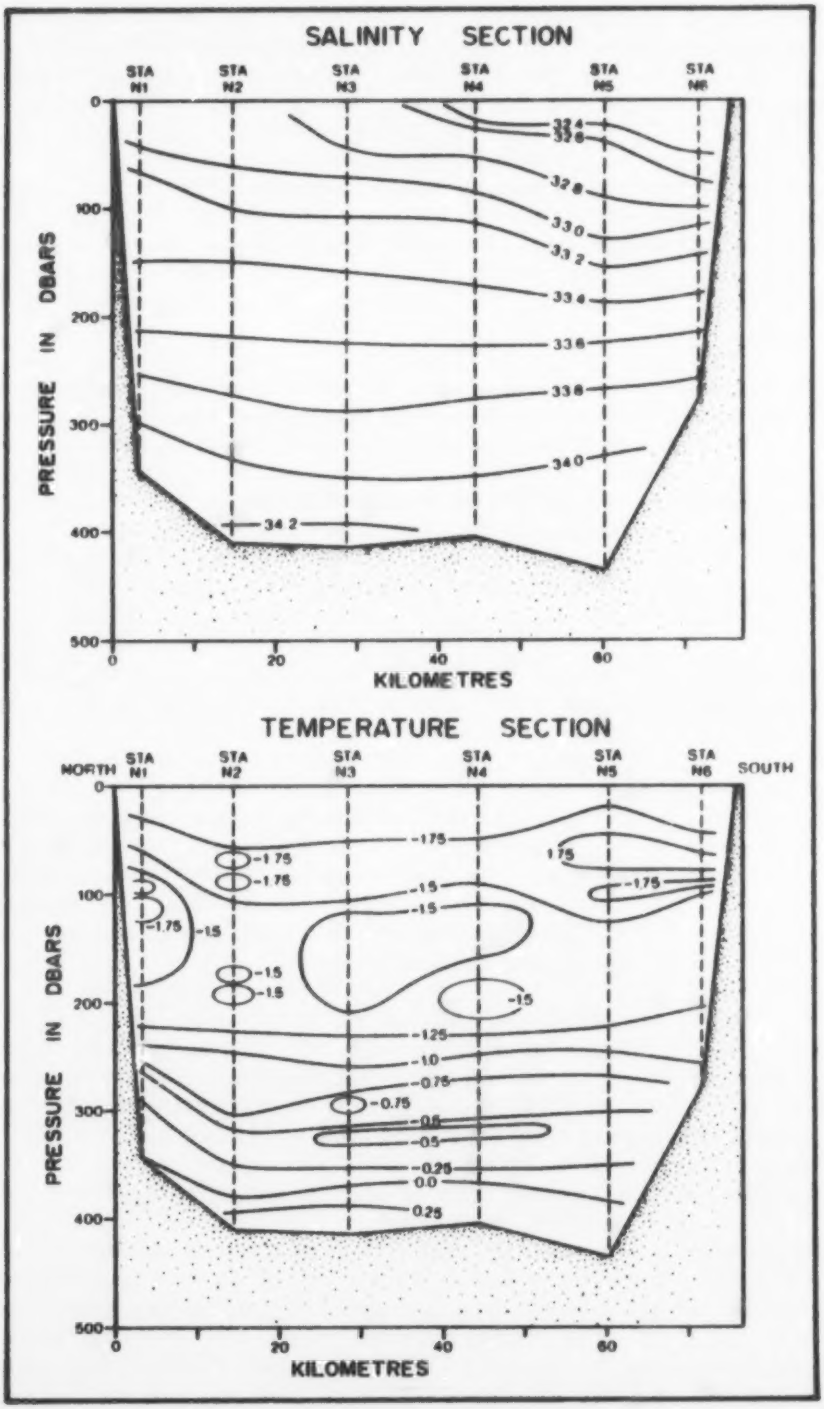


Figure 41: Vertical sections of temperature and salinity across western Lancaster Sound (line N).

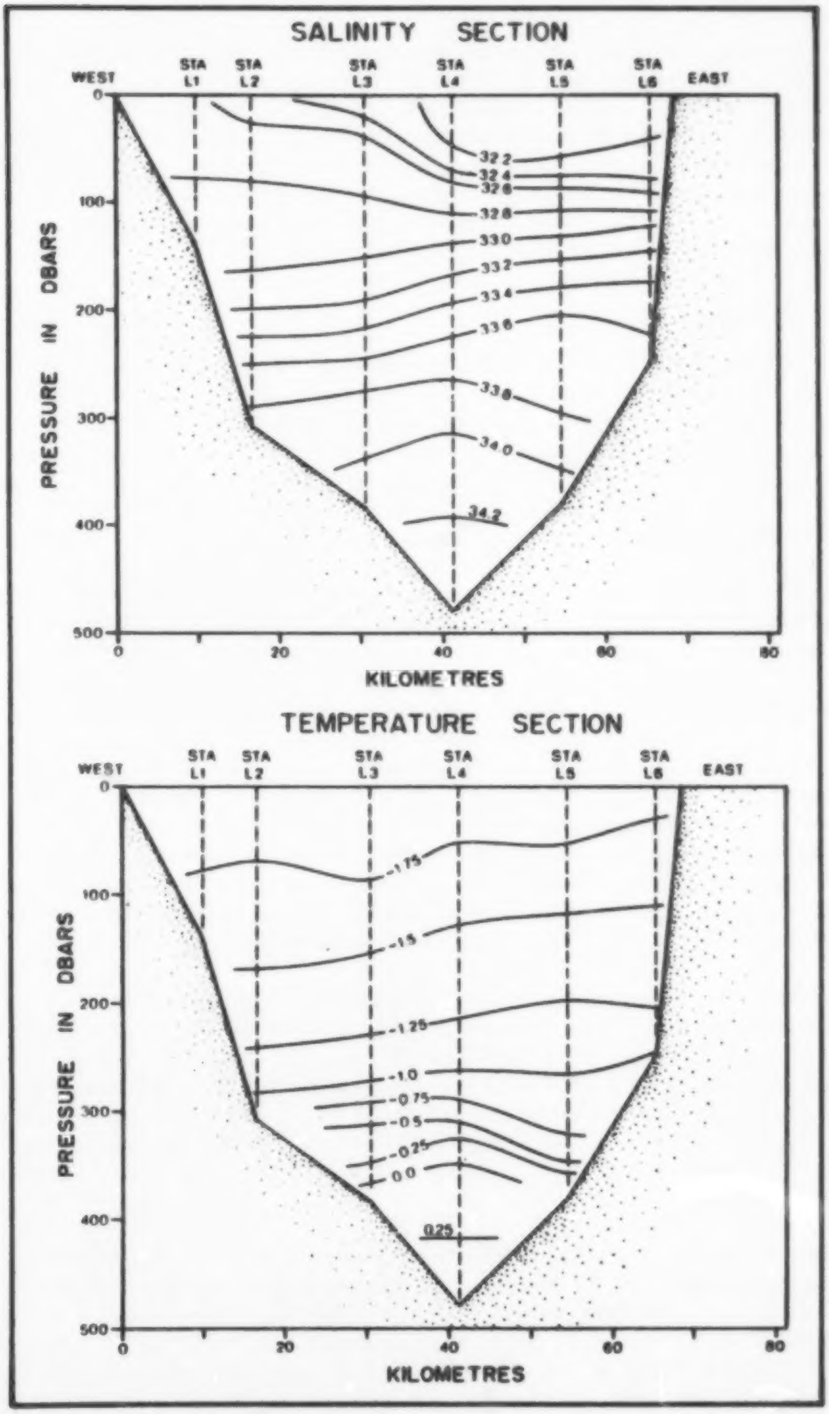


Figure 42: Vertical sections of temperature and salinity across Prince Regent Inlet (line L).

Vertical Sections

The vertical sections through western Lancaster Sound (Figure 41), reveal a consistent decrease in salinity from north to south over the uppermost 200 m of the water column. This salinity gradient is largest on the southern side of the Sound at depths of 100 m or less. At depths over 200 m, the horizontal gradients are generally weaker with a tendency for salinities to decrease from the north side to the centre of the Sound and then increase again to the southern coastline. The temperature gradients are generally weak over large horizontal distances although larger differences occur between individual stations, due to the intense small-scale vertical temperature variations, dicussed above.

The geostrophic velocities computed for western Lancaster Sound (Figure 43) indicate an easterly flow of the upper 50 m of the water column relative to the deeper water through all adjacent station pairs. The flow at 10 dbar relative to the deepest common standard depth varies with position from north to south as: 7.4 cm/s for stations N1 and N2 (relative to 300 dbar), 6.0 cm/s for stations N2 and N3 (400 dbar), 4.7 cm/s for stations N3 and N4 (400 dbar), 9.6 cm/s for stations N4 and N5 (400 dbar) and 3.9 cm/s for stations N5 and N6 (250 dbar). At the latter station pair, N5 and N6, the geostrophic flow reverses at 100 dbar, with a maximum westerly directed flow of 5.0 cm/s relative to 250 dbar at this level. Over the width of the Strait between stations N1 and N6, the net flow is easterly with values (relative to 250 dbar) of 6.7 cm/s at 10 dbar, decreasing to 4.1 cm/s at 50 dbar, 1.6 cm/s at 100 dbar and only 0.3 cm/s at 150 dbar.

The vertical sections of temperature and salinity across Prince Regent Inlet (Figure 42) indicate a general trend towards lower temperatures from east to west at depths of less than 300 m. The horizontal salinity gradients are more complex. In the upper 100 m of the water column, salinities increase from east to west, but exhibit the opposite change at depths between 100 and 300 m. At greater depths, the temperatures increased and salinities decreased towards station L4 in the middle of the Inlet.

The computed geostrophic velocities for Prince Regent Inlet (Figure 43) suggests a northward flow on the western side (stations L1 and 12) and the eastern side of the Inlet (station pairs L4-L5 and L5-L6). However, for station pairs L2-L3 and L3-L4, the flow is southward over most of the water column with a particularly large magnitude of 12 cm/s at a depth of 125 m, relative to 380 dbar. For this station pair, a strong current shear above 125 dbar results in northerly flows at depths less than 30 dbar, with a value of 5 cm/s at 10 dbar.

Across this section, the 10 dbar flows relative to the deepest common pressure, indicated in brackets, are generally northward with values of 7.5 cm/s (L1-L2, 250 dbar), -0.8 cm/s (L2-L3, 300 dbar), 5 cm/s (L3-L4, 380 dbar), 2.2 cm/s (L4-L5, 380 dbar), and 2.1 cm/s (L-L6, 300 dbar). The overall northward flow at shallower depths suggests that Prince Regent Inlet contributes to the net easterly geostrophic flow computed for western Lancaster Sound. However, the computed geostrophic velocities for Prince Regent Inlet should be used with caution in view of the large vertical velocity shears which extend to the deepest common depth of station pairs. A shift in the reference level could result in large changes of the computed

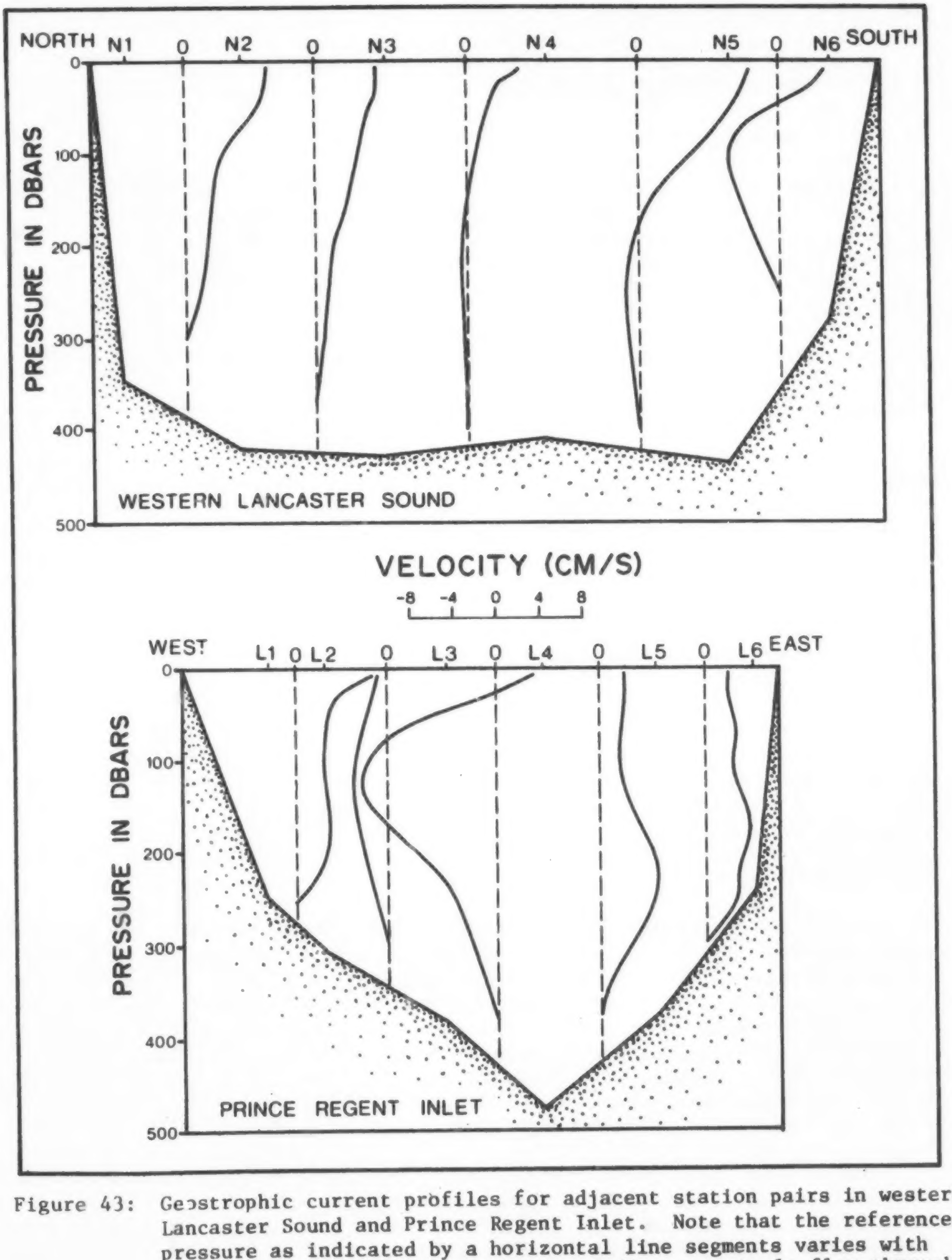


Figure 43: Geostrophic current profiles for adjacent station pairs in western Lancaster Sound and Prince Regent Inlet. Note that the reference pressure as indicated by a horizontal line segments varies with station pair. Positive velocities indicate easterly flow through Lancaster Sound and northerly flow through Prince Regent Inlet.

magnitudes and even the direction of the geostrophic currents within the upper 200 dbar of the water column.

5.6 AREA-WIDE SUMMARY OF WATER MASS CHARACTERISTICS AND GEOSTROPHIC CIRCULATION

Water Mass Properties

To examine the variations in water mass properties throughout the study area, data from four stations were selected as being representative of widely separated regions: B4 for the channels of the Queen Elizabeth Islands, E2 for M'Clure Strait and M'Clintock Channel, H2 for Amundsen Gulf and N5 for Lancaster Sound and Prince Regent Inlet. These data are presented in the form of TS diagrams (Figure 44) and vertical profiles (Figure 45). Because of the variability in the water mass properties within each region, as discussed in Subsections 5.2 to 5.5, the data from the individual stations cannot represent completely the regional characteristics. Nevertheless, these data do serve to demonstrate some of the more significant regional differences.

In all regions, the water mass properties have similar features: an upper zone layer characterized by vertically uniform, near-freezing temperatures, lying beneath the ice, and where depths are sufficient, a layer of Atlantic Water with higher temperature and salinity of nearly uniform character, beginning at depths from 300 to 400 m. Between these layers, a transition layer is found with generally increasing temperatures and salinities. Two other layers, the temperature maximum and below this, the cold halocline layer are found to occur intermittently within the study area. At locations where one or both of these layers are not present, they are replaced by water having transition zone characteristics.

While the upper zone exhibits pronounced changes throughout the study area, the variability within each region is comparable to the area-wide changes. As a result, few clear patterns emerge. The thickness of the upper zone varies considerably within most of the regions: 0 to 50 m in the Queen Elizabeth Island, 45 to 55 m in M'Clure Strait, 20 to 60 m in Amundsen Gulf, 15 to 40 m in M'Clintock Channel and 25 to 70 m in Lancaster Sound and Prince Regent Inlet.

Near-surface (5 dbar) salinities also exhibit large differences within each region: 31.6 to 33.0 in the Queen Elizabeth Island, 32.2 to 32.4 in M'Clure Strait, 29.7 to 32.8 in Amundsen Gulf, 30.5 to 31.8 in M'Clintock Channel and 32.3 to 32.8 in Lancaster Sound and Prince Regent Inlet. Lower near-surface salinities (<31.0) are found in the southwestern part of the study area, in southeastern Amundsen Gulf, Dolphin and Union Strait and southern M'Clintock Channel. This may result from a combination of greater annual freshwater input from runoff and ice melt combined with less salt input from ice formation.

The highest near-surface salinities (>32.5) are found at the western end of Amundsen Gulf (32.6-33.0), on the northern side of Lancaster Sound (32.81-32.83) and the westernmost station of Prince Regent Inlet (32.70), and across Penny Strait (32.66-33.01). With the exception of Penny Strait, these locations were situated near thin ice and open-water leads, or in the case of western Lancaster Sound, a recently formed ice edge. Thus, the nearby ice formation may account for the elevated near-surface salinities.

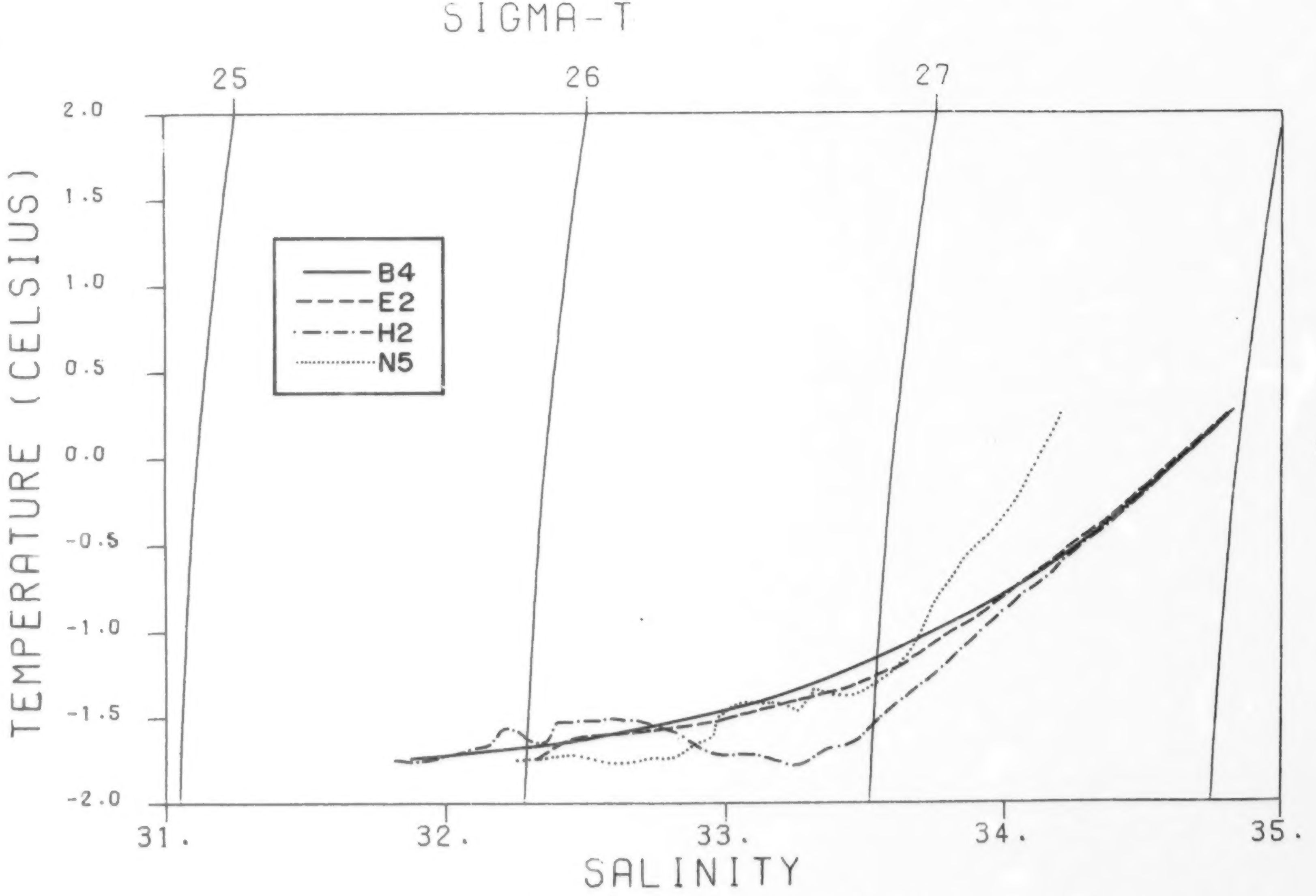


Figure 44: The TS curves of representative stations of the Sverdrup Basin (B4), M'Clure Strait (E2), Amundsen Gulf (H2) and Lancaster Sound (N5).

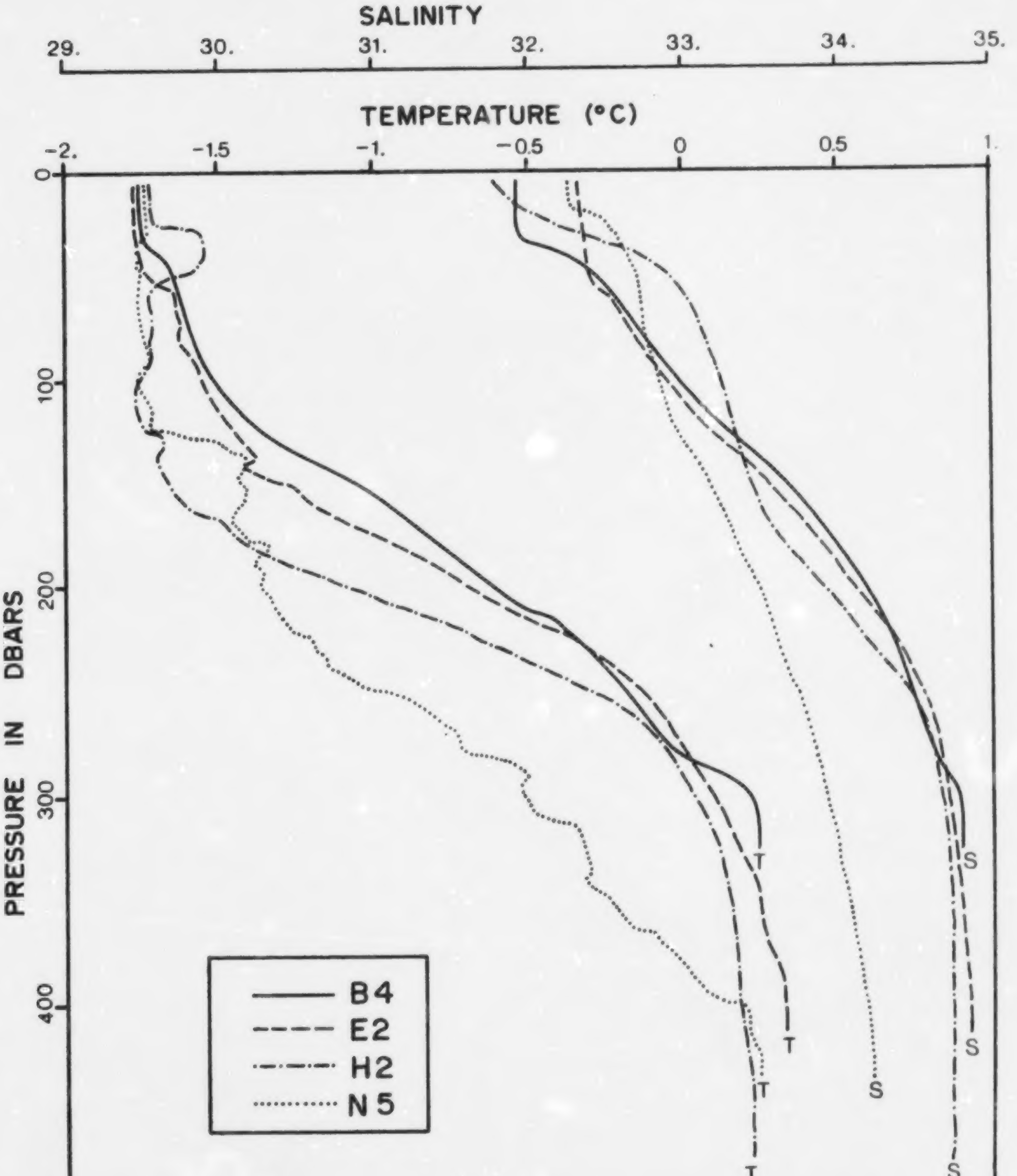


Figure 45: Vertical profiles of temperature and salinity of representative stations for the Sverdrup Basin (B4), M'Clure Strait (E2), Amundsen Gulf (H2) and Lancaster Sound (N5).

In Penny Strait, the near-surface waters appear to be influenced by deeper water characteristics, as demonstrated by elevated near-surface temperatures as well as salinities. Unlike all other CTD stations where near-surface temperatures were within 0.02C° of the surface freezing point value, the temperatures in Penny Strait were 0.06 to 0.09°C above the freezing point. Thus, an upward transport of heat and salt appears to be taking place. Such a vertical exchange may be related to the polynya formation often associated with this region.

In summary, the horizontal distribution of the properties of the upper zone layer seem to be influenced more by local vertical exchanges taking place within a region than by horizontal processes such as advection or mixing from one region to another.

The temperature maximum layer occurs intermittently throughout the study area. It is most prominent in central and eastern Amundsen Gulf, with peak temperatures of -1.55 to -1.37, and in southern M'Clintock Channel (-1.42 to -1.49). At two of the stations in Lancaster Sound, temperature maxima of -1.48°C (N1) and -1.44°C (N4) are found but were not clearly present at the other four stations on this transect. The temperature maximum feature is generally intermittent and weaker (<-1.55°C) at the other measurement locations. In addition, the salinities associated with the peak temperature vary widely from region to region, with a low range of 31.8 to 32.2 in southern M'Clintock Channel to a high range of 32.52 to 32.75 in Amundsen Gulf.

In view of the intermittent occurrences and lack of any west to east gradient in the temperature maximum layer, it seems unlikely that the temperature maximum is being advected through the channels of the Arctic Archipelago from the Arctic Ocean.

A more plausible hypothesis is that the temperature maximum results from the accumulated solar insolation of the previous summer, which is eroded from above by surface freezing processes. Such a hypothesis would account for the much weaker temperature maxima of the channels of the Queen Elizabeth Islands where the ice cover cleared the least during the summer of 1981 (Figure 4), as compared to Amundsen Gulf where the surface was ice free for an extended period of time.

The cold halocline layer is also intermittently distributed within the study area. It is most evident in Amundsen Gulf, appearing at depths of 75 m or less to 110-165 m. Minimum temperatures within this layer range from -1.75 or less to -1.55°C. The cold halocline layer is also present on the northern side of Lancaster Sound, at depths of 95 to 175 m, with temperatures of -1.76 to -1.62°C, and in a more irregular fashion at the central stations of western Lancaster Sound. In the other regions of the study area, a cold halocline layer is ill defined: the vertical temperature gradients are often weaker at depths from 100 to 150 m, gradually increasing to the layer gradients of the transition zone layer. Temperatures over these depths range from -1.5 to -1.35°C.

The origin of the cold halocline layer is believed to be associated with ice formation resulting in a large degree of salinization which produces near-freezing water of sufficient density to descend to depths in excess of 100 m (Aagaard, Coachman and Carmack, 1981). The fact that well-defined cold halocline layers are found only in Amundsen Gulf and Lancaster Sound is consistent with such an origin. Melling and Lewis (1982) have shown that the continental shelf of the Beaufort Sea is an area where water with these general characteristics could be formed. Under the influence of the Coriolis force, this water would be expected to enter Amundsen Gulf on the south side. Just such a pattern is found in the minimum temperature distribution (Figure 31). Similarly, the open water or thin ice of the large North Water polynya of northern Baffin Bay and eastern Lancaster Sound could also produce the near-freezing water observed at depth at some stations in western Lancaster Sound. Indeed, Lemon and Fissel (1982) have observed occurrences of increased salinities at freezing temperatures to maximum depths of 200 to 250 m, over the winter in northwestern Baffin Bay. In the other parts of the study area the absence of this well-defined, cold halocline layer indicate that these regions are far removed from source areas of this water type.

The transition zone layer has different characteristics throughout the study area. The pronounced difference of the underlying Atlantic Water characteristics of Lancaster Sound and Prince Regent Inlet results in much warmer temperatures east of the limiting sills of the Arctic Archipelago. Choosing a salinity surface of 33.9, roughly in the middle of the salinity range, the temperatures at this salinity generally increase with distance from the Arctic Ocean. Such a trend was previously noted in the channels of the Queen Elizabeth Islands (Section 5.2) with warming from -0.87°C (line D) to -0.72°C (line A), and from M'Clure Strait (-0.93°C) to northern M'Clintock Channel (-0.85°C).

This warming cannot be the result of Baffin Bay Atlantic Water. While the TS characteristics are comparable (temperatures of -0.75 to 0.04°C in Lancaster Sound-Prince Regent Inlet), the 33.9 salinities occur at depths of 270 to 330 m, far greater than the sill depths separating the eastern and western to central basins of the archipelago. More likely, the increased temperatures from west and north to central portions of the area result from vertical mixing of the underlying Atlantic Water with the water above, possibly enhanced by mixing due to tidal or other types of flows around shallow areas in these basins. This local vertical mixing would tend to result in more linear TS curves, raising the temperatures at constant salinities (Figure 44).

In Amundsen Gulf, the transition zone is notably colder, with temperatures of -1.06 to -0.99°C on the 33.9 salinity surface. These lower temperatures reflect the mixing of the overlying cold halocline layer with the Arctic Ocean Atlantic Water below. The TS curves for this region are very linear through the transition layer, indicating that mixing of the two local water types accounts for the TS characteristics of the transition layer.

The horizontal distribution of Atlantic Water within the study area is remarkably uniform, as indicated by the TS characteristics (Figure 44). In all regions west of the limiting sills of the archipelago, the TS curves converge to the same water type. The TS characteristics of the water column are virtually constant below the local limiting sill depth in those basins which are deeper than the connecting passage from the Arctic Ocean. In Amundsen Gulf, the deepwater TS values are 0.22°C and 34.77, corresponding to a free passage of water into the Gulf at depths above 325 m. In northern M'Clure Strait, the corresponding values are 0.31°C and 34.83 with a sill depth of 390 . Further into the archipelago, another sill in southern

Viscount Melville Sound limits free passage to depths of 290 m in northern M'Clintock Channel, resulting in deepwater TS values of 0.08°C and 34.68. The temperature and salinity profiles in the basins of the Queen Elizabeth Islands at depths greater than approximately 350 m exhibit nearly uniform values approaching 0.29°C and 34.82, related to the presence of a sill in Prince Gustaf Adolf Sea limiting free to depths of 380 m.

To the east of the Barrow Strait, the Atlantic Water of western Lancaster Sound and Prince Regent Inlet is of Baffin Bay origin. The maximum temperatures were comparable to those further to the west (0.29-0.32°C) but the limiting salinities were markedly lower at 34.22.

Nutrient Distributions

At depths of 50 to 75 m, the concentration of dissolved organic nutrients tends to be lower in the eastern portion of the study area (Lancaster Sound and Prince Regent Inlet) and highest in the Amundsen Gulf region. This general west-to-east reduction is most apparent in the horizontal distributions of phosphate and silicate (Table 4). The phosphate concentrations average 1.38 mmol/m^3 in both the Lancaster Sound and Prince Regent Inlet region, as compared to 1.84 in Amundsen Gulf, 1.73 in M'Clintock Channel and 1.67 in the Queen Elizabeth Islands. A similar pattern is evident in the silicate concentrations. However, the difference in nitrate concentrations is less pronounced with relatively high values in Amundsen Gulf (13.2) but similar levels in M'Clintock Channel (10.7), the Queen Elizabeth Islands (9.9) and Prince Regent Inlet (10.0) and somewhat lower in Lancaster Sound (9.1).

Table 4

The average concentration of dissolved inorganic nutrients in mmol/m^3 summarized by region. The number in parentheses denotes the number of stations used in computing the average quantity.

Region	5 m Concentrations			50-75 m Concentrations		
	Silicate	Phosphate	Nitrate	Silicate	Phosphate	Nitrate
Amundsen Gulf (lines F,G,H,I & J)	10.9(10)	1.35(9)	4.6(10)	27.4(10)	1.84(10)	13.2(10)
M'Clure Strait (line E)	10.4(2)	1.29(2)	4.5(2)	13.9(2)	1.39(2)	6.0(2)
M'Clintock Channel (Lines K & M)	11.1(3)	1.09(3)	3.6(3)	26.3(3)	1.73(3)	10.7(3)
Queen Elizabeth Islands (lines A,B &C)	15.9(5)	1.41(5)	6.7(5)	22.3(3)	1.67(3)	9.9(3)
Prince Regent Inlet (line L)	16.0(2)	1.32(2)	7.6(2)	21.1(2)	1.38(2)	10.0(2)
Lancaster Sound (line M)	8.7(2)	1.21(2)	4.5(2)	17.9(2)	1.38(1)	9.1(2)

The horizontal distribution of nutrients at 5 m is more complex showing greater variability within the same regions. This apparently results from varying degrees of biological activity, which deplete the near-surface nutrients.

The general pattern of lowered nutrient concentrations in Lancaster Sound and Prince Regent Inlet agrees well with the summer nutrient distributions described by Jones and Coote (1980). They observed a decrease in the silicate and phosphate concentrations from Barrow Strait eastward through Lancaster Sound into Baffin Bay. This horizontal gradient was attributed to the diminishing influence of Arctic Ocean Arctic Water with its higher nutrient concentrations and the increasing presence of Baffin Bay Arctic Water with its lower concentrations. Jones and Coote (1980) found that the differences in the nitrate concentrations of these two types of Arctic Water were much less than for silicate and phosphate.

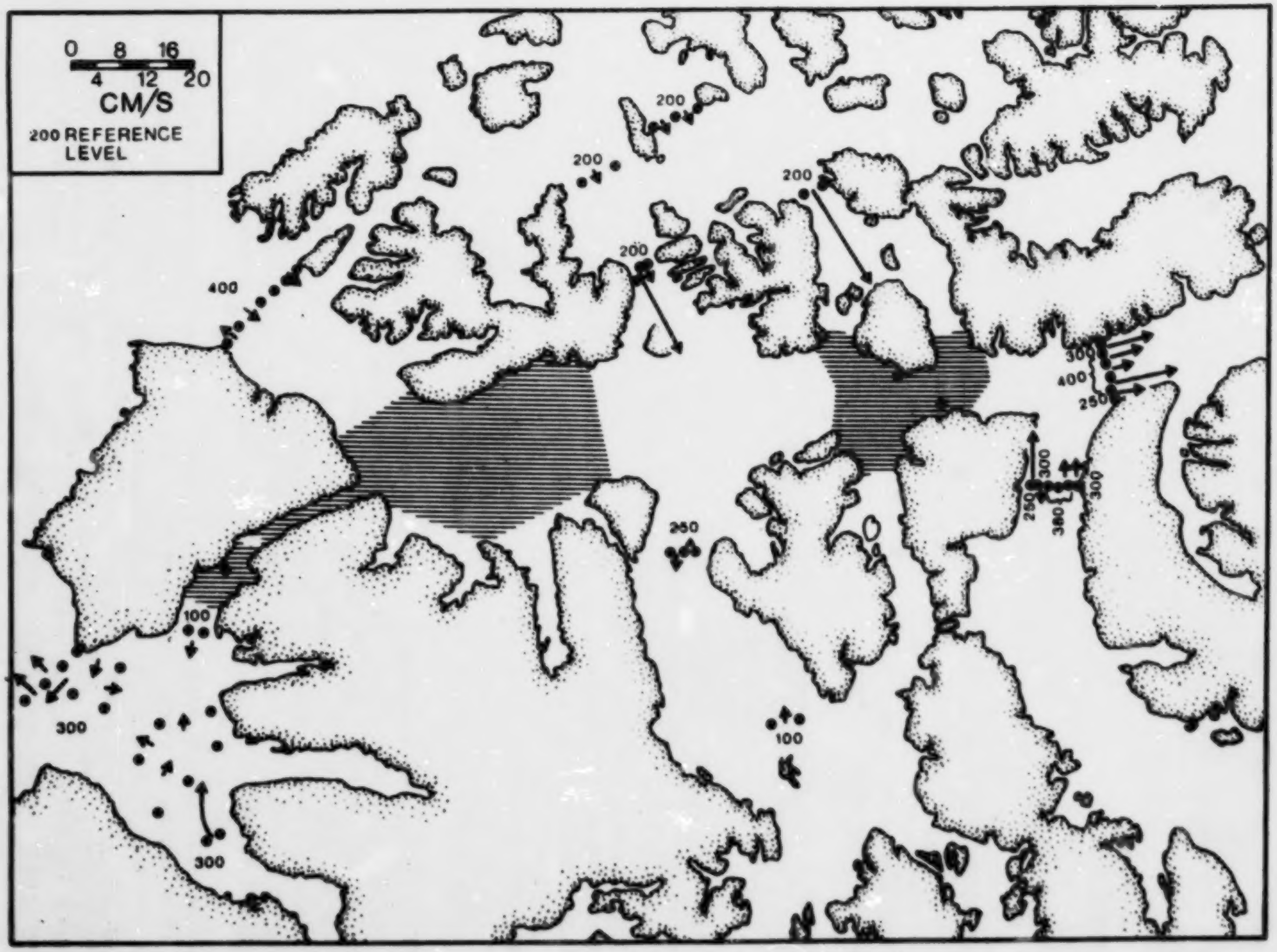
One curious feature of the nutrient data is the anomalously low silicate and nitrate levels in M'Clure Strait at depths of 50 to 75 m. (No phosphate data were available for this region.) The concentrations were reduced by 18% for silicates and 36% for nitrates in comparison with those of Lancaster Sound. The nutrients were much lower on the south side of the Strait with silicate and nitrate values of 10.5 and 4.2 as compared to 18.7 and 7.4 on the north side of M'Clure Strait.

Geostrophic Currents

The baroclinic component of the near-surface geostrophic currents relative to deep water levels are summarized in Figure 46. The velocities were computed at the 10 dbar level relative to a deepest common level between adjacent station pairs, usually chosen as the nearest standard pressure. More detailed information concerning the geostrophic flow patterns and depth dependence can be found in the subsection describing the results for each region.

Near-surface geostrophic flows through the Arctic Archipelago appear to be generally from the north and the west to the east. Through the Queen Elizabeth Islands, the currents set southerly into Parry Channel, with relatively low speeds (<2 cm/s) on either side of Lougheed Island and much higher speeds through the relatively narrow passages of Byam Martin Channel (14 cm/s) and Penny Strait (17 cm/s). In M'Clure Strait at the western end of Parry Channel, the near-surface geostrophic currents are generally weak (<3 cm/s) with a net easterly flow (<1 cm/s) indicated over the width of the Strait. The near-surface currents are also low through the northern and southern portions of M'Clintock Channel. Stronger near-surface geostrophic currents occur in Prince Regent Inlet directed northwards with magnitudes between station pairs ranging from 2.2 to 7.5 cm/s. Thus, a net eastward flow occurs through Parry Channel resulting from inflow through the connecting passages to the north (Penny Strait, Byam Martin Channel) and to the south (Prince Regent Inlet). This eastward movement is apparent across western Lancaster Sound, where all station pairs indicate an eastward geostrophic current ranging from 3.9 to 9.6 cm/s.

Near-surface geostrophic currents are weak through most of Amundsen Gulf, having magnitudes of 1 cm/s or less. A net westerly flow into Amundsen Gulf from Dolphin and Union Strait is indicated. At the western end of Amundsen


0 8 16
4 12 20
CM/S
200 REFERENCE LEVEL
400
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100
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300

Figure 46: The geostrophic velocity at 10 dbar computed from oceanographic stations, relative to deep water levels as indicated in parentheses.

Gulf, a clockwise gyre occurs flowing into the Gulf on the north side and out on the south side. Typical geostrophic speeds of approximately 4 cm/s are associated with this circulation feature.

6. SUMMARY AND CONCLUSIONS

An oceanographic survey of various channels of the Canadian Arctic Archipelago was conducted over a 19-day period from March 19 to April 6, 1982. In this survey, working from a twin-engined aircraft, 70 CTD profiles were obtained as well as measurements of dissolved nutrients at 30% of the CTD stations.

The major features of the water mass properties were similar throughout the study area. Beneath the ice, an upper zone layer was present, characterized by vertically uniform, near-freezing temperatures and relatively low salinities. Where water depths were sufficient, a layer of Atlantic Water was found above the bottom with higher temperatures (>0°C) and salinities. Between these layers, temperature and salinities generally increase with depth from the low values of the upper zone to the higher values of the Atlantic Water, as a transition layer.

Beneath the upper zone, two other layers of the Arctic Water layer were observed intermittently among the CTD stations. These are the temperature maximum layer and the cold halocline layer.

Based on the horizontal distributions of the water properties, the properties of the upper zone and temperature maximum layer of the Arctic Water layer appeared to be determined largely by vertical exchanges which have occurred within the local area rather than advective processes between different areas. For example, in the upper zone, areas of particularly large salinities occur in western Amundsen Gulf, the western side of Prince Regent Inlet and the northern side of Lancaster Sound. In the first two of these regions, open-water leads and thin ice were observed at nearby locations while the latter region was near a recently formed ice edge. The ice formation in these areas could account for the elevated near-surface salinities.

The temperature maximum layer also appears to originate locally, rather than being advected into the study area from the Arctic Ocean. This conclusion is based on the intermittent occurrences of this feature among the measurement sites and the absence of any marked west to east gradients in its properties. In most areas, it seems more likely that this layer is a result of summer insolation since the least pronounced temperature maxima occur in the regions of minimal clearing of sea-ice during the previous summer.

Concentrations of dissolved silicate and phosphate nutrients at depths of 50 to 75 m appear to serve as a useful indicator of Arctic Ocean Arctic Water within the Canadian Archipelago. The measured levels of these nutrients were found to generally decrease from west to east. In the easternmost regions of the study area, concentrations were markedly reduced due to the stronger influence of Baffin Bay Arctic Water, known to have lower silicate and phosphate concentrations (Jones and Coote, 1980).

The cold halocline layer is most evident in Amundsen Gulf and Lancaster Sound. In both of these regions, thin (5 to 25 m) bands with markedly lower temperatures are found within this layer. Similar smaller-scale features observed by Melling and Lewis (1982) over the continental shelf of the southeastern Beaufort Sea, have been explained as a result of ice formation generating cold, saline water which descends to the appropriate density surface. The cold halocline layer, including the small-scale temperature bands, originates in adjoining areas where sea-ice formation is large. For Amundsen Gulf, the likely source region would be the continental shelf of the southeastern Beaufort Sea, while the cold halocline layer in Lancaster Sound likely originates in northern Baffin Bay associated with the North Water polynya.

Within Amundsen Gulf, the horizontal distribution of temperature and salinity in the upper portion of the Arctic Water layer indicates that cold saline water enters Amundsen Gulf from the west on the south side. This cold, saline water, evident in the upper zone, temperature maximum and cold halocline layers, is most concentrated near Cape Parry. (This easterly flow pattern past Cape Parry is opposite to that computed on the basis of geostrophic computations, as discussed below.) From this area, the cold, saline water appears to be advected eastward and northward within the Gulf, as indicated by the horizontal gradients of temperature and salinity within the upper portion of the Arctic Water Mass.

Spatial gradients, observed within the transition zone layer, indicate that a gradual warming of the water at a constant salinity is occurring within the channels of the Arctic Archipelago at depths of 150 to 250 m. The warming trend is observed within the Queen Elizabeth Islands and from M'Clure Strait into M'Clintock Channel. The change in temperature for a given salinity amounts to approximately 0.10C°. This change of the TS characteristics of the transition zone layer may result from local vertical mixing within the water column, perhaps associated with tidal or other types of flows around bathymetric features having depths that are similar to the levels at which modifications occur.

The geostrophic circulation patterns indicate a general tendency for near-surface currents to enter Parry Channel from the north, the south and the west, resulting in an eastward outflow through Lancaster Sound. Relatively strong southward geostrophic flows with speeds greater than 15 cm/s were computed between station pairs in Penny Strait and Byam Martin Channel. Within the Sverdrup Basin and M'Clure Strait, the near-surface geostrophic currents were much weaker, less than 3 cm/s, but still directed towards eastern Parry Channel. In Prince Regent Inlet the near-surface geostrophic currents were directed northwards with speeds of up 7.5 cm/s.

The near-surface geostrophic circulation within Amundsen Gulf is very weak over most of the region with speeds of 1 cm/s or less. Exceptions to this include a relatively strong westerly inflow from Dolphin and Union Strait and a clockwise meander across western Amundsen Gulf. Within Amundsen Gulf proper, a very weak cyclonic circulation is apparent. The flow magnitudes are greatly reduced by comparison with those calculated from previous summer observations with the largest reductions occurring in the upper 100 m of the water column.

In some parts of the study area, large vertical shears occur in the geostrophic current profiles. Such large vertical shears are found in M'Clure Strait, the western entrance to Amundsen Gulf and Prince Regent Inlet. The velocity profiles typically occur as a pronounced maximum or minimum at depths between 100 and 300 m, with large gradients often extending to the bottom. In these areas, the near-surface velocity estimates must be considered somewhat more uncertain than elsewhere due to the difficulty in establishing a level of no motion.

Determination of the year-to-year variability of water properties and geostrophic flow fields was limited to those few areas where under-ice oceanographic data had been previously obtained. In the sections across channels of the Queen Elizabeth Islands, generally good agreement was found with the spring 1979 results of Peck (1980b). On either side of Lougheed Island, weak southerly geostrophic flows were indicated in agreement with the present study. The southward flow across Byam Martin Channel appears to be stronger by about a factor of two, in the spring of 1982 than was the case three years earlier. Across M'Clure Strait, the bottle cast data collected in 1961 revealed the same general features of water property distributions. Unfortunately, the greater station separation and much reduced vertical resolution of the 1961 data made definitive comparisons difficult. Further data collection over a long-term, year-to-year basis is required to adequately determine long period variations in water properties and circulation features.

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APPENDIX 1

CALIBRATION PROCEDURES FOR THE AMUNDSEN GULF CTD DATA

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APPENDIX 1

1. CALIBRATION AND INTERCOMPARISON DATA

From March 29 to April 2, inclusive, CTD profiles were obtained at transects G, I, H, and J in Amundsen Gulf and at transect F at the southern entrance to Prince of Wales Strait. On April 2, in addition to completing transect F, an intercomparison was made between the CTD units in use by Arctic Sciences (probe 4) and the Frozen Sea Research Group (probe 5).

The intercomparison revealed that large differences existed in the measured salinities of the two CTD probes, with those of probe 4 reading lower by 0.375. Subsequent analysis of water bottle samples at Resolute showed that most if not all of the difference was due to erroneously low readings from probe 4. (During bench tests at the Johnson Point Camp on April 2 and at Resolute on April 3, the large errors could not be repeated. Subsequent use of this CTD probe from April 4-6, including an intercomparison with the same model of CTD probe in use by the Bayfield Laboratory for Marine Science and Surveys on April 4, showed no evidence of such errors recurring.)

Calibration data during the March 29-April 2 period of operations in Amundsen Gulf were obtained by means of deepwater salinity samples from a reversing bottle and near-surface comparisons of CTD probe temperatures with two thermistors attached to the probe. These calibration data are summarized in Table 1, while the locations of CTD stations in Amundsen Gulf are shown in Figure 1.

1.1 TEMPERATURE CALIBRATIONS

The temperature calibration data indicate that over the March 29 to April 2 period, the CTD probe was in error by -15.3 ± 4.6 mdeg (mean ± std.dev, $n=4$). For the purposes of estimating conductivity errors, it was assumed that the temperature error was -8 ± 2.3 mdeg on March 29 (the correction applied before March 29 and after April 3) and then increased to -15 ± 4.6 mdeg from March 30 to April 2, inclusive. This assumption appears to fit the available calibration data reasonably well and furthermore, keeps near-surface freezing point deviations to a daily average of 10 mdeg or less on March 30-31, based on initial estimates of the conductivity corrections. During the period March 29 to April 2, the temperature values are more uncertain by about a factor of two than those measured before or after (based on standard deviations of calibration data of 4.6 mdeg ($n=4$) and 2.3 mdeg ($n=6$), respectively).

Table 1

Summary of calibration data obtained from March 29-April 2 in the Amundsen Gulf region. Note that temperature errors are based on uncorrected CTD temperatures and that salinity errors have been computed using correction values described in Section 1.1. The best estimate of pressure offset computed from a check to wire out has been applied to the data.

Date	Station	Depth (m)	Temperature Error (mdeg)	Depth (m)	Salinity Error
29 March	G5	7	-10.4±0.7	-	-
29 March	G2	-	-	327	0.322±0.005
30 March	I6	-	-	431	0.304±0.010
31 March	H1	-	-	290	0.221±0.010(a)
1 April	J5	6	-15.8±0.7	-	-
1 April	J3	-	-	333	0.416±0.010
2 April	F3	-	-22.7±1.2	-	-
2 April	T1	-	-12.3±4.6(b)	59	0.365±0.004

Notes:

a) based on two salinity samples only; the third sample was 0.128 larger, apparently as a result of freezing while drawing the sample.

b) The difference in the uncorrected temperatures of the two probes was -9.6 ±4.6 mdeg at 5 m intervals from 10 to 75 m, inclusive. Allowing for the fact that CTD probe 4 was reading low by 2.7 ±0.2 mdeg in thermistor calibrations on April 1 and 3, the temperature error is taken as -12.3 ±4.6 mdeg.

1.2 CONDUCTIVITY CALIBRATIONS

The conductivity calibration errors, expressed in the form of equivalent salinity errors, are found to be large, as was suggested by the intercomparison station T1 on April 2. Based on the bottle samples, the errors have a mean value of 0.320 ±0.066 (± standard deviation, n=5).

Of particular concern is the large magnitude of the variation from one calibration sample to another, with individual values ranging from 0.214 to 0.416. Because of the large magnitude of the variations, applying a mean correction would leave large uncertainties in the CTD data. The application of an individual correction value for each day of operation would be better but with calibration points available only once each day, it is not known whether shorter term variations are significant. To examine this question further, individual CTD profiles were compared as to their temperature-salinity (TS) characteristics in order to estimate the variations of the conductivity errors within a period of one day.

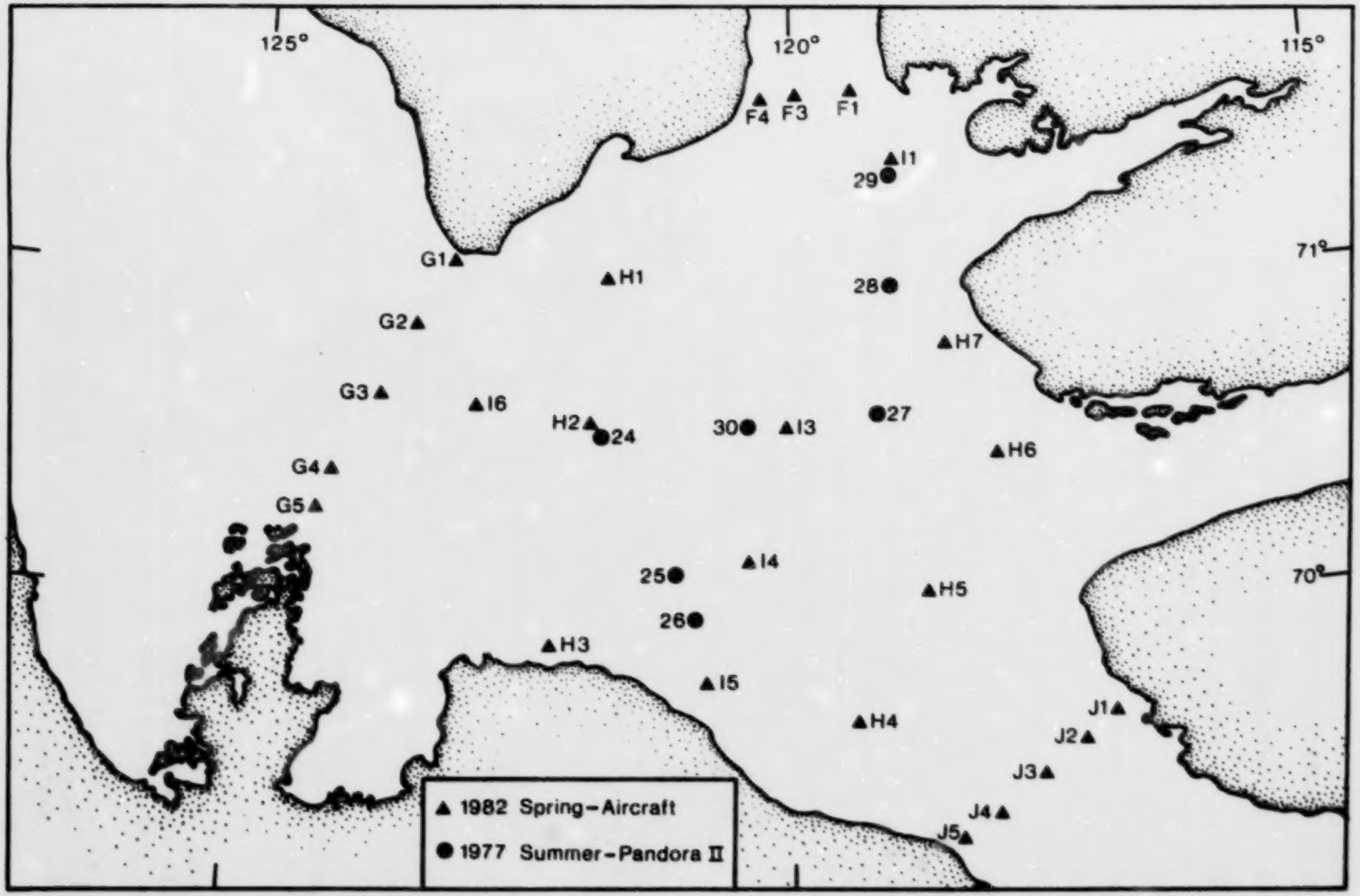

125°
120°
115°
71°
70°
F4
F3
F1
I1
29
G1
H1
28
G2
H7
G3
I6
H2
24
30
I3
27
H6
G4
G5
25
I4
H5
26
H3
I5
H4
J1
J2
J3
J4
J5
▲ 1982 Spring-Aircraft
● 1977 Summer-Pandora II

Figure 1: The locations of CTD stations occupied in Amundsen Gulf in the spring of 1982 and bottle stations occupied in the summer of 1977.

2. ESTIMATION OF CONDUCTIVITY ERRORS FROM TS CHARACTERISTICS OF CTD PROFILES

2.1 TS WATER MASS CHARACTERISTICS OF AMUNDSEN GULF

The stability of deepwater TS characteristics was first examined by plotting the four bottle sample salinities obtained at depth (from stations G2,I6,H1 and J3) along with the corrected CTD temperature for the same depth on a TS diagram (Figure 2). The cluster of points are consistent in their TS characteristics falling within about ±0.01 of a straight line fit to these points.

To further examine the TS characteristics, hydrographic data obtained in the summer of 1977 from the M.V. Pandora II (Macdonald et al., 1978) were compared with the spring 1982 bottle points (Figure 2). The summer 1977 data agreed well with the spring 1982 data, corresponding to within ±.025 or better at depths of 300 m or more. No systematic difference is apparent in the two data sets. In view of the fact that the two data sets were obtained using different methods, the agreement between the data sets suggests that the waters of Amundsen Gulf at depths of 300 m or deeper have relatively stable TS characteristics over long time scales. (The difference due to the redefinition of the salinity scale is negligible, amounting to only 0.001 according to the values given by Lewis and Perkin (1981) for the salinometer procedures used by Macdonald et al., 1978.)

2.2 TS CURVES DERIVED FROM SPRING 1982 CTD DATA

Using the data of the present study, TS curves using corrected temperatures were plotted for all pressures in excess of 30 dbar for each day of operation (Figures 3-7). Also shown on these figures, are any available bottle salinities indicating the error of the corresponding CTD salinity.

The most striking feature of the CTD TS curves is the nearly straight TS lines, beginning at depths below 150 to 200 dbar. Typically the curves appear as nearly straight lines with small scale (2-25 m) variations superimposed. Upon closer examination, ignoring these small scale variations, the slopes are typically constant from depth ranges of 200-250 dbar to 300-350 dbar. Beyond these limits, the slopes tend to be more positive in most of the profiles.

For all stations with data extending to 225 dbar or more, the temperature-salinity data sampled at 5 dbar intervals, a least squares fit was made to the linear equation:

$$S = mT + b. \qquad (1)$$

Because of the tendency for TS curves to deviate from a straight line at levels greater than 350 dbar the least squares fit was limited to points above this level. The results, listed in Table 2, show that:

a) a linear fit over depths from 200 to 350 dbar is a good representation of the TS-curve for all profiles. The mean of RMS and maximum deviations for individual fits were 0.008 and 0.017.

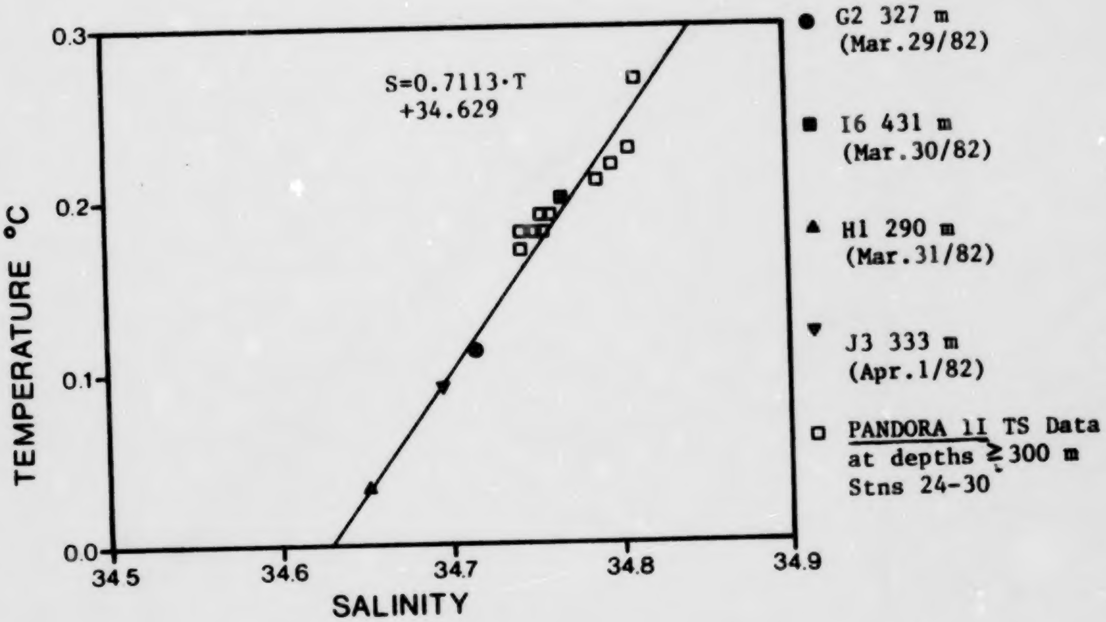


Figure 2: The TS diagram of bottle data collected in the spring of 1982 and the summer of 1977.

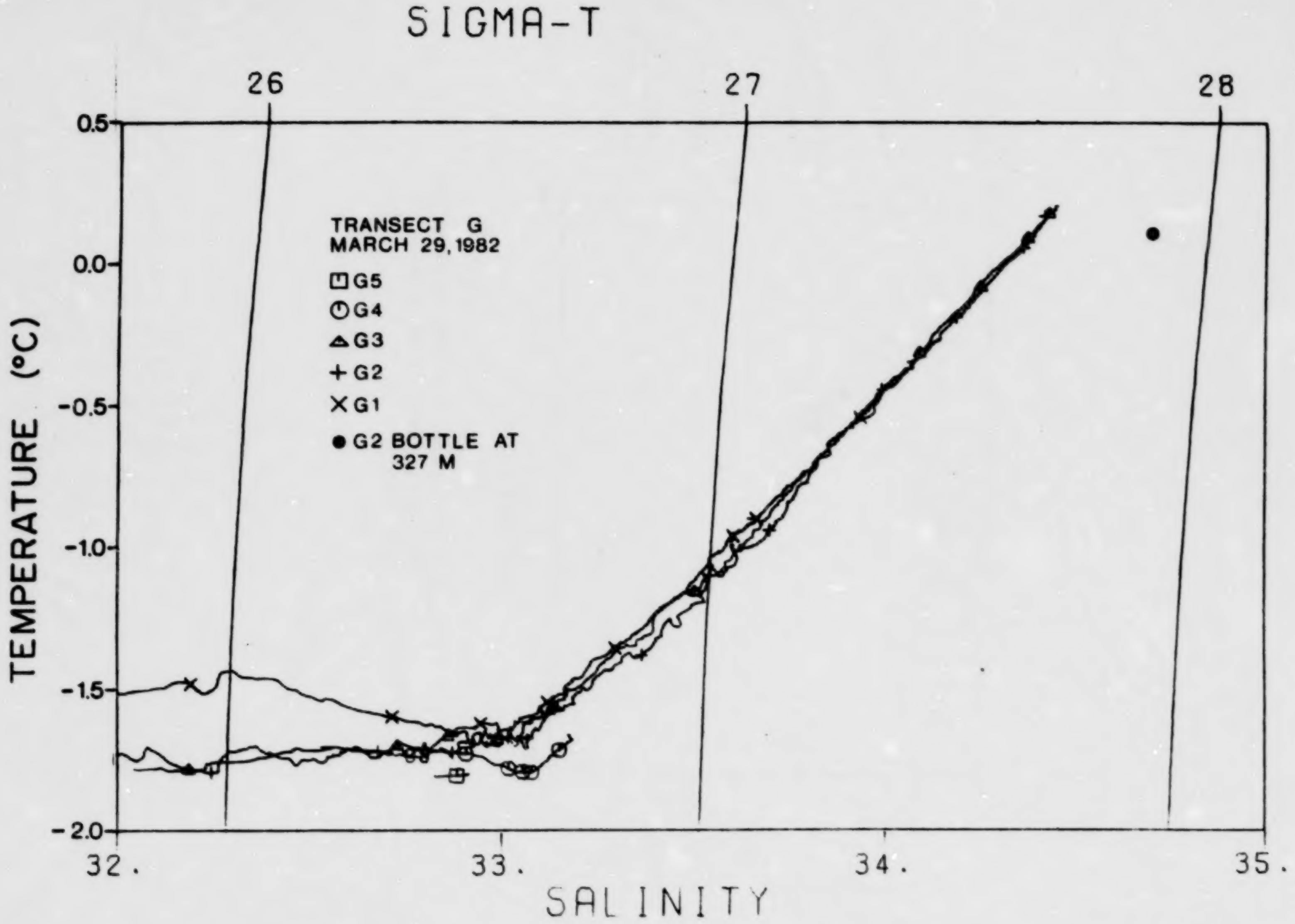


Figure 3: The TS curves of CTD stations of section G, March 29, 1982.

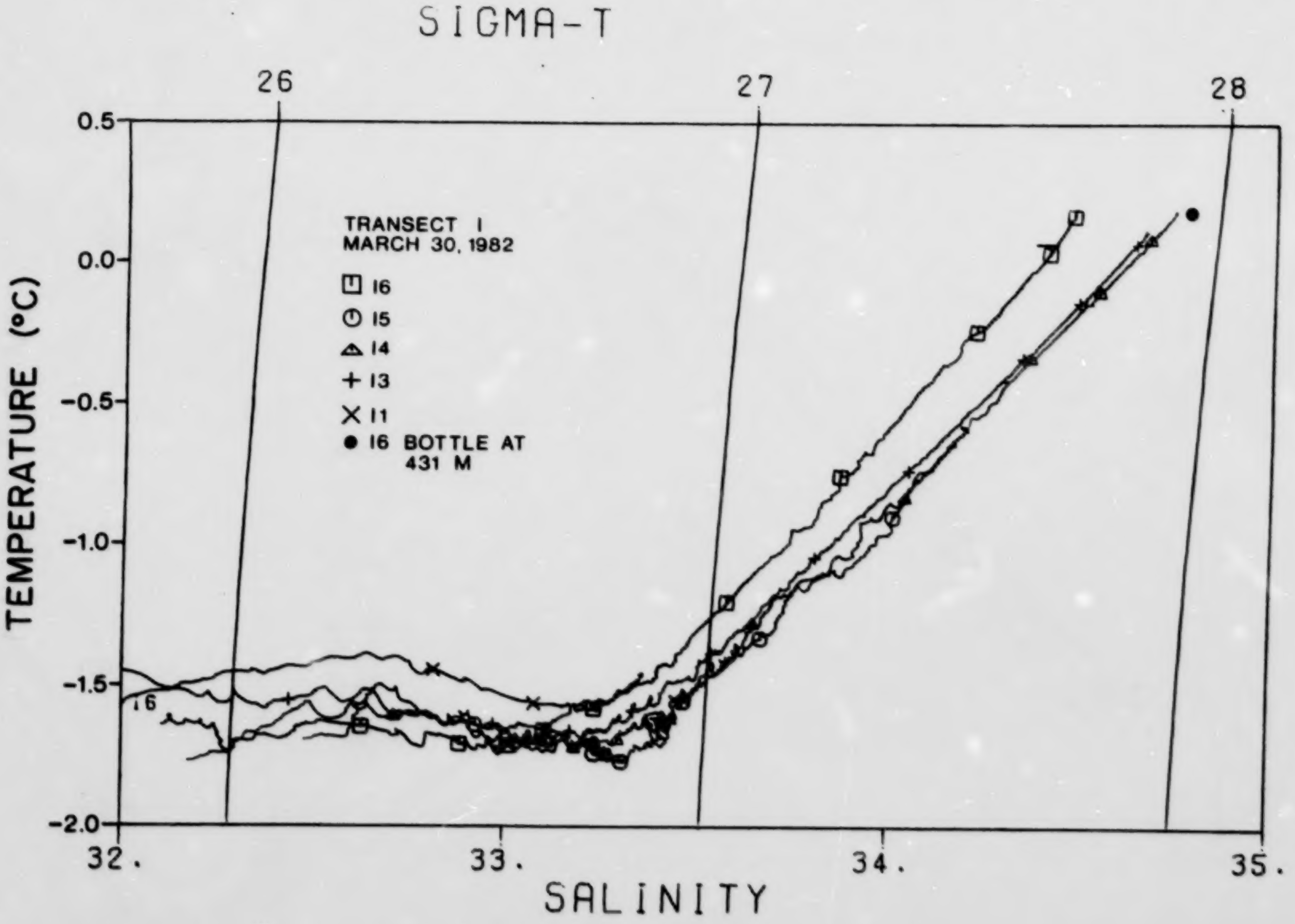


Figure 4: The TS curves of CTD stations of section I, March 30, 1982.

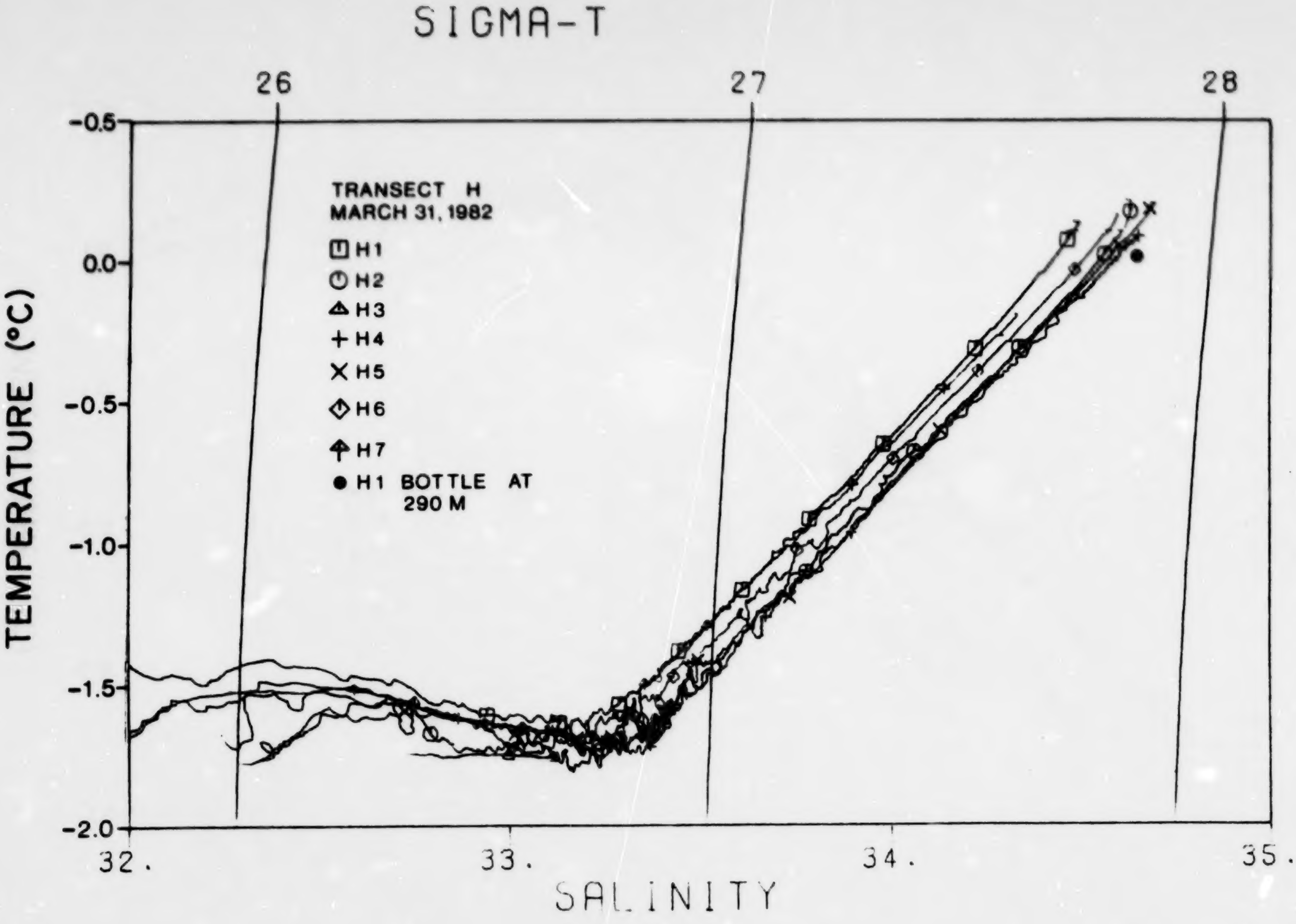


Figure 5: The TS curves of CTD stations of section H, March 31, 1982.

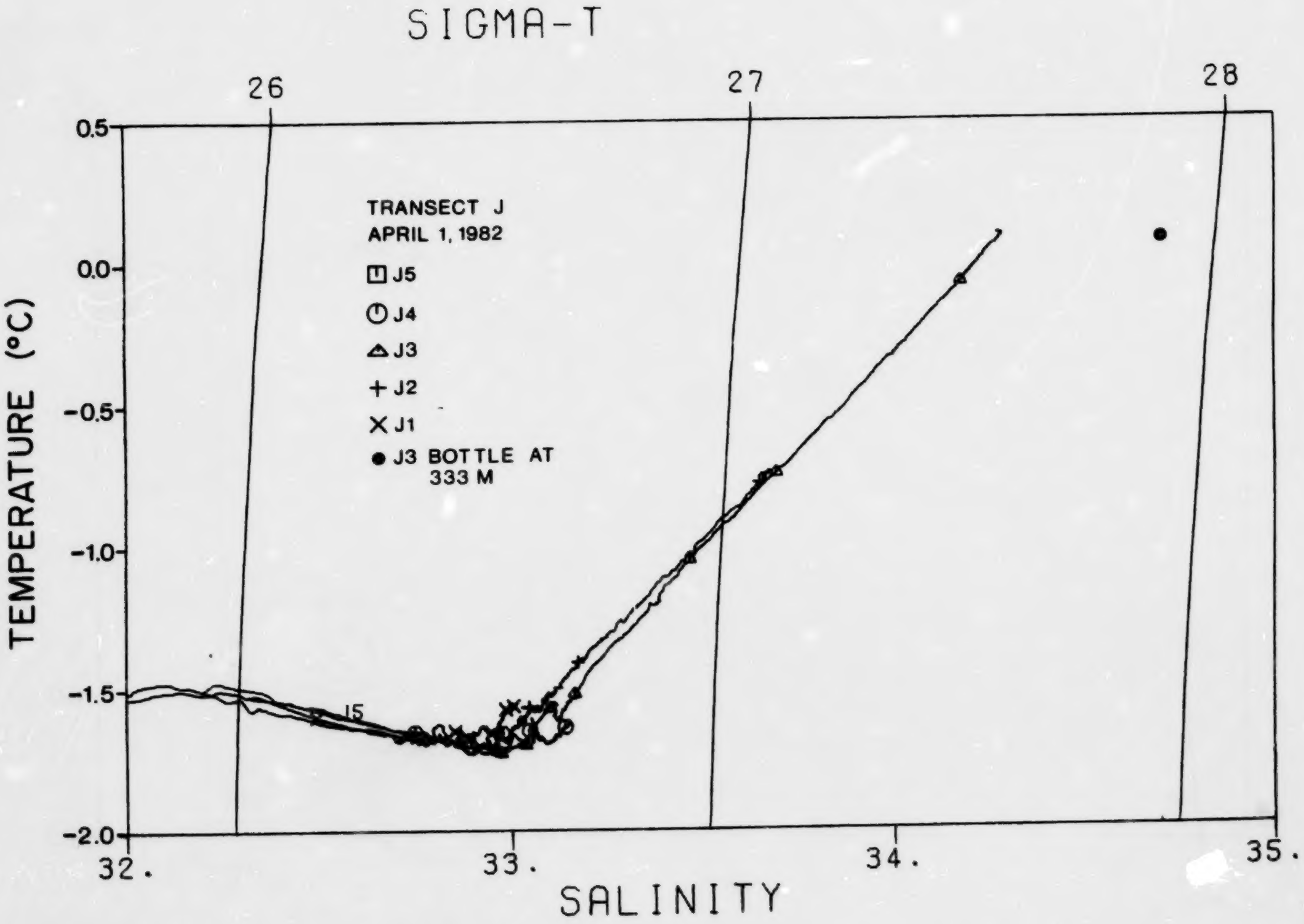


Figure 6: The TS curves of CTD stations of section J, April 1, 1982.

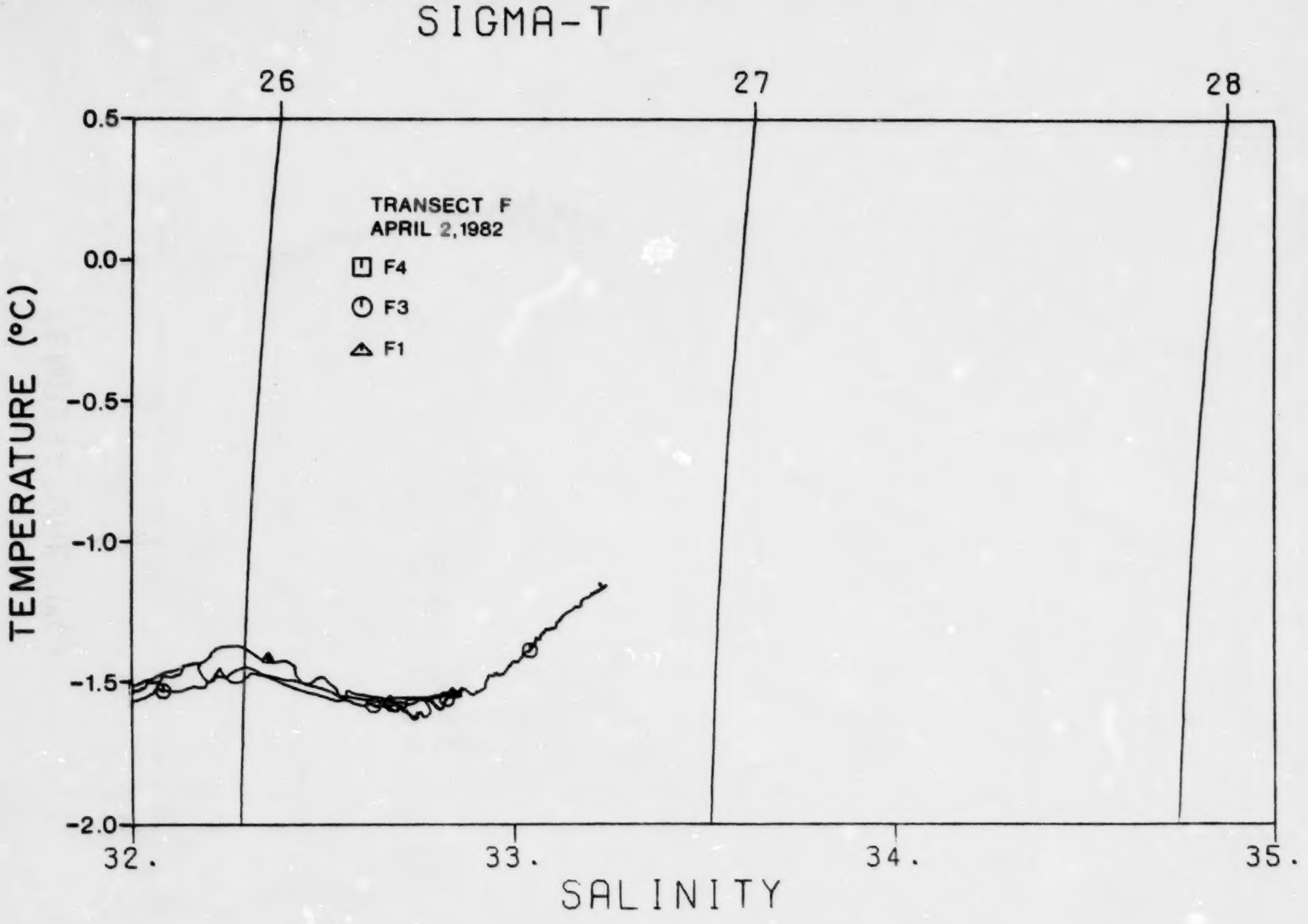


Figure 7: The TS curves of CTD stations of section F, April 2, 1982.

b) the slopes are in remarkably good agreement among the individual measurement sites. Based on 15 CTD casts the fitted slopes had a mean value of 0.7113 with a standard deviation of 0.0248. Over a temperature range from -1.3 (approximately 180 dbar) to 0.20 (approximately 450 dbar), the corresponding variations in salinity amount to ± 0.019 for the range of the standard deviation and ± 0.037 for the range from maximum to minimum computed slope.

The above comparisons show that an average TS slope of 0.7113 is applicable to CTD profiles at depths of 200 dbar or more within the uncertainties described above. To determine the constant or offset value (b) in the linear equation, the four bottle sample salinities and corresponding corrected CTD temperatures were applied to the equation. This gives values of the constant as 34.629 ± 0.003 (n=4), ranging from 34.624 to 34.632.

Therefore, the linear equation

$$S = 0.7113\ T + 34.629 \tag{2}$$

was used for the estimation of conductivity errors when no better method was available.

2.3 METHOD OF ESTIMATING CONDUCTIVITY ERRORS

For the purpose of estimating conductivity errors, the salinity error was determined by one of three procedures:

1) If a bottle salinity sample was available, the salinity error was computed as the difference between the CTD value using corrected temperatures and the bottle salinity.

2) For those casts which span pressures from 280 to 305 dbar or more, salinity errors were estimated by comparing computed salinity using equation (1) with the slope (m) as listed in Table 2. The temperature used is the corrected CTD temperature. The offset (b) was computed from the station H1 temperature-bottle salinity point. (The H1 TS pair was chosen since it has the least deviation from the fitted linear curve of Figure 2.) The difference between salinities computed in this fashion and the CTD salinities from 280 to 320 dbar at 5 dbar intervals is taken as the salinity error at 300 dbar.

3) For those CTD casts where methods (1) and (2) are not possible, because no bottle salinities were obtained and the maximum depth does not exceed 305 dbar, the salinity error is computed as in method (2) except that the generalized linear TS equation for Amundsen Gulf (equation 2) is used. The salinity differences are computed over the three deepest 5 dbar classes available.

Table 2

The regression coefficients computed from a least squares for equation (1) from TS points at 5 dbar intervals from 200 dbar to 350 dbar (or maximum pressure).

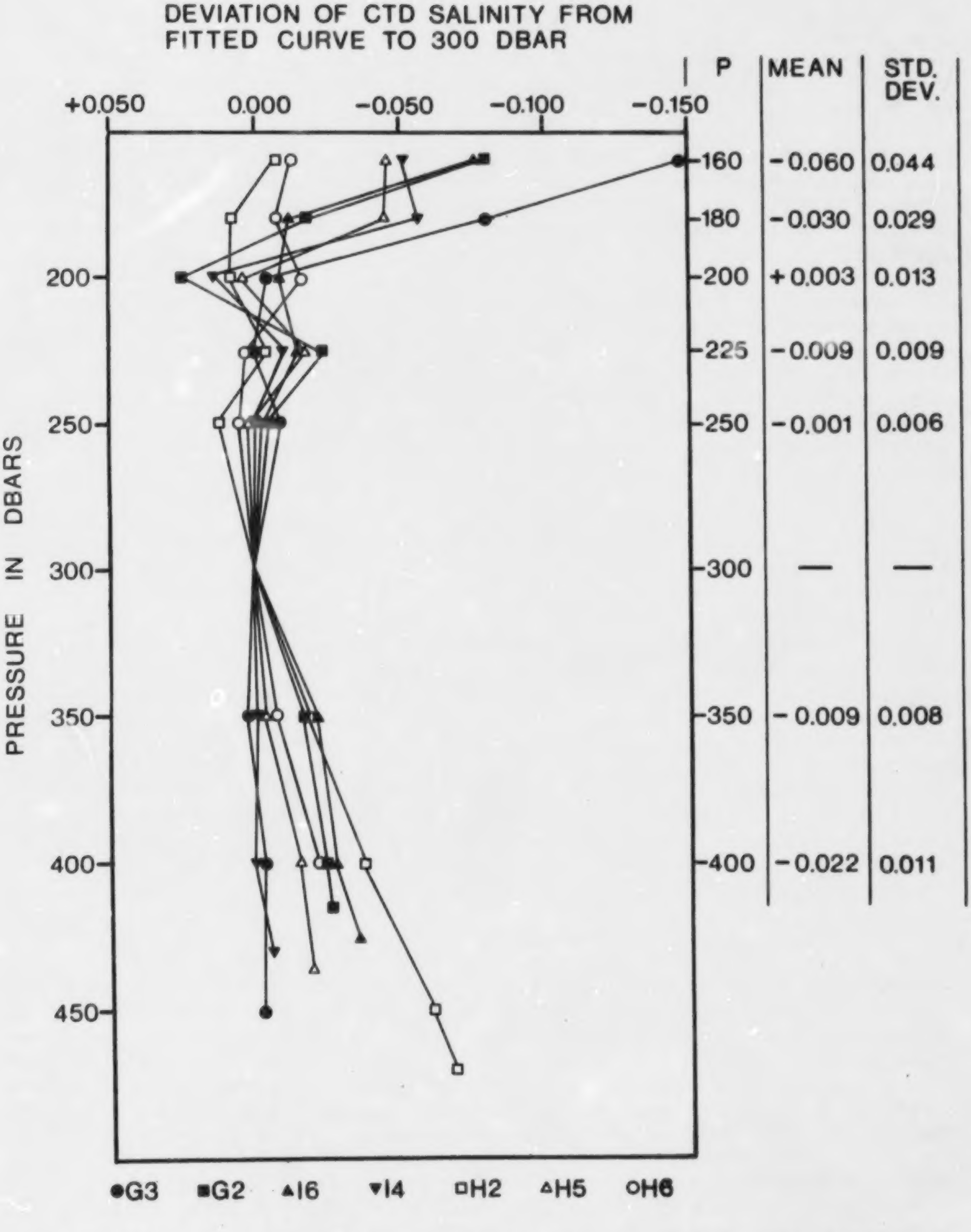
Station	**Pressures** **Min.** (dbar)	 **Max.**	**Slope** **m**	**Offset** **b**	**Difference** **RMS**	 **Max.**
G3	200	350	0.6912	34.306	0.004	0.008
G2	200	350	0.6890	34.315	0.010	0.032
G1	200	260	0.7583	34.345	0.006	0.011
I6	200	345	0.6606	34.361	0.008	0.023
I5	200	235	0.7374	34.633	0.023	0.046
I4	200	350	0.7001	34.594	0.004	0.014
I3	200	310	0.7207	34.569	0.005	0.009
H1	200	315	0.6783	34.408	0.009	0.019
H2	200	350	0.7057	34.531	0.010	0.018
H4	200	305	0.7256	34.572	0.006	0.011
H5	200	350	0.7007	34.551	0.005	0.016
H6	200	345	0.7178	34.492	0.006	0.016
H7	200	275	0.7386	34.463	0.004	0.009
J3	200	330	0.7140	34.223	0.006	0.013
J2	200	225	0.7322	34.217	0.005	0.009
Mean ± Std.Div.			0.7113±0.0248		0.008	0.017

2.4 UNCERTAINTIES IN ESTIMATES OF CONDUCTIVITY ERRORS

The uncertainties associated with the method of estimating salinity error from an assumed linear TS relationship can be illustrated from the deviations of the fitted CTD data from the linear curves (Figure 8). By definition, the deviation at 300 dbar must be zero in this figure. However, the actual uncertainty for pressures near 300 dbar can be estimated as the combined maximum deviation over depths of 280 to 320 dbar (0.017) and the scatter in the bottle derived linear salinity-temperature fit (0.010) taken as twice the standard deviation of the bottle points. Thus, the estimated uncertainty would amount to the square root of $0.017^2 + 0.010^2$ or 0.020.

At pressures other than near 300 dbar, the uncertainties increase as indicated by the scatter in the deviations from fitted linear curves (Figure 8). The nature and magnitude of these uncertainties can be estimated from the deviations of the seven deepest casts (G3, G2, I6, I4, H2, H5 and H6).

Using equation (1) and the slope from Table 2, the error was computed for 300 dbar and then the differences between the actual error and 300 dbar error were calculated for the 160, 180, 200, 250, 350, 400 and deepest levels. From these differences (Figure 8), the relative uncertainties appear to be comparatively large at 180 and 200 dbar (standard deviations of 0.044 and



P	MEAN	STD. DEV.
160	−0.060	0.044
180	−0.030	0.029
200	+0.003	0.013
225	−0.009	0.009
250	−0.001	0.006
300	—	—
350	−0.009	0.008
400	−0.022	0.011

Figure 8: The deviation of the CTD salinity from the fitted curve, relative to 300 dbar. See the text for details on the curve fitting procedure.

0.029). At 250 and 350 dbar, the relative uncertainties are reduced (0.006 and 0.008, respectively) and increase again at 400 dbar to 0.011. Given that the apparent scatter in the bottle salinity-derived TS points to a straight line amounts to approximately 0.010, the total uncertainty estimate is taken as twice the root mean square of the relative value and 0.010. for each depth range. This yields approximate values of 0.02 to 0.03 for pressures from 200 to 250 dbar.

At depths less than 200 dbar and greater than 350 dbar, a systematic difference is found which is comparable or larger than the standard deviation (Figure 8). For the shallower depth range, it seems most likely that this systematic difference is simply an indication that the linear TS curve is not applicable.

However, for the depths greater than or equal to 350 dbar, the difference is more difficult to explain. Based on the limited number of bottle samples, the assumed linear TS curve should apply to depths in excess of 400 dbar (Figure 2). However, the fitted CTD salinities based on agreement with the TS curve at 300 dbar do not appear to follow this curve at greater depths. For example at 400 dbar, the mean deviation from the linear TS curve is -0.022 ±0.011. Furthermore, the difference appears to increase with increasing depths (Figure 8).

This result suggests that either (a) the linear TS curve is not applicable at depths greater than 350 dbar or (b) that a constant correction in salinity and hence conductivity is not appropriate for depths ranging from 300 to 350 dbar or greater.

To investigate this latter possibility, calculations were made for the data from stations I6, G3 and H2. At station I6, a bottle salinity was collected at 431 m depth, while the deviations at stations G3 and H2 represent minimum and maximum levels. Forcing the linear curve to agree at either 300 dbar or 430 dbar results in a salinity difference of approximately 0.030. A difference of 0.030 appears to be significant in terms of the bottle-derived TS curve of Figure 1. The salinity data from stations H2 and G3 represent cases of maximum and minimum deviations from the TS curves. For the H2 data, forcing a fit to the TS curve at 470 dbar, results in a difference of 0.066 at 300 dbar, while the same calculation using station G3 data at 455 dbar results in a negligible difference of 0.001 at 300 dbar.

One resolution to this apparent contradiction would be that the conductivity error is depth dependent. To test this hypothesis, it was assumed that the error varies linearly with depth. Computations were made for station I6, and H2 data deriving the conductivity errors from values at the deepest available pressure and 300 dbar. Extrapolating to the 10 dbar level results in a reduction of salinity of 0.070 and 0.118, from that expected using a constant conductivity correction based on agreement at 300 dbar. While no independent measurements of near-surface salinities are available, the existence of these pressure dependent conductivity errors would result in larger negative deviations from the freezing point temperature. This would amount to increasing the near-surface freezing point temperature deviation from -5 mdeg to -10 mdeg at station I6 and from -10 to -17 mdeg at station H2. Such an increase appears unlikely given the already depressed freezing point deviations.

No indication of pressure dependent conductivity, and hence salinity errors, are apparent in the intercomparison tests of April 2, 1982 (Station T1) as shown in Figure 9. However, the range of available depth for this purpose is limited to 60 m, with the expected salinity differences being only 0.015 and 0.024, based on the results of the Station I6 and H2 derived pressure dependent errors. The small expected systematic difference in relation to the size of the observed differences indicate that the negative finding for the intercomparison test cannot be taken as conclusive evidence.

In view of the absence of conclusive information, we assumed that pressure dependent conductivity errors are not significant for the purposes of correcting the CTD data. However, the need to make this assumption adds further unknown uncertainties to the calibrated conductivity and salinity values.

2.5 SUMMARY OF CONDUCTIVITY CORRECTIONS

Sizeable conductivity errors are apparent in the CTD data collected in Amundsen Gulf with magnitudes ranging from near zero to 0.400 equivalent salinity. Based on the limited calibration data available, the following correction procedures were applied to the data:

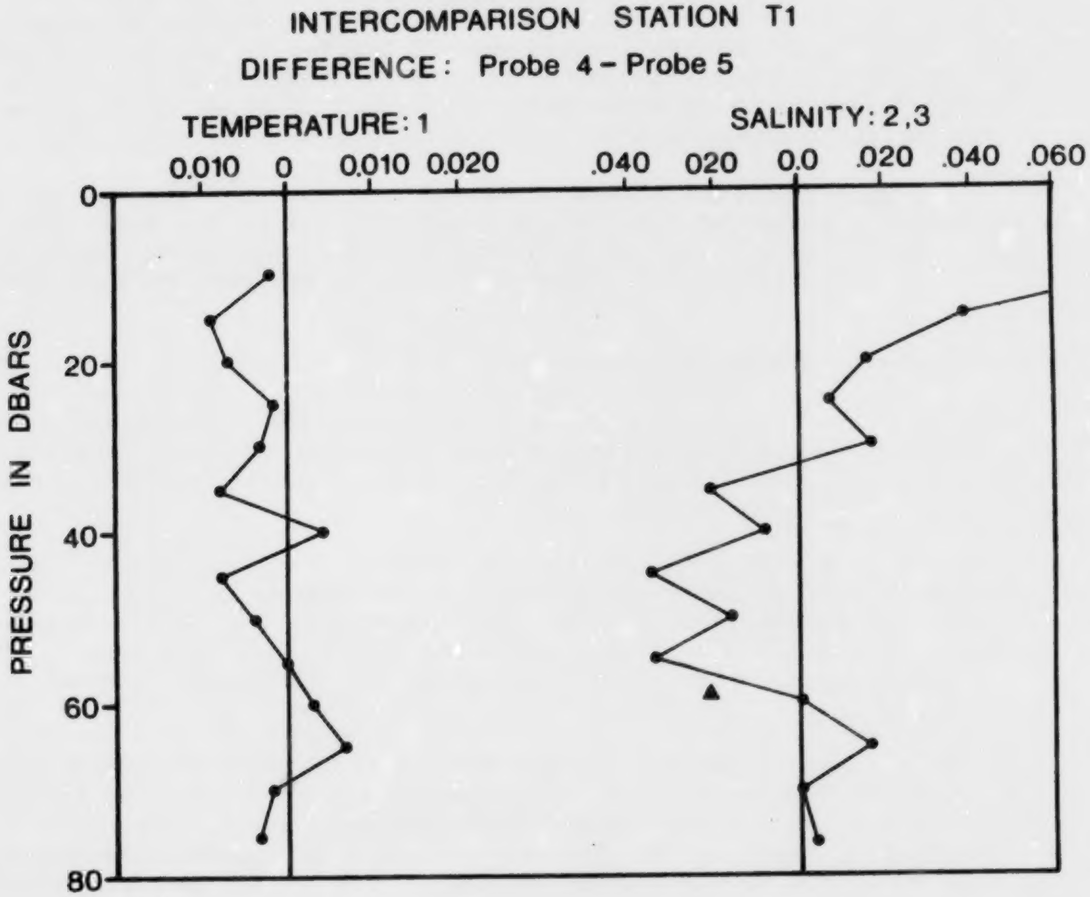
a) For stations G2, H1 and J3, the bottle sample salinities and corrected CTD temperatures were used to derive the conductivity errors (method (1), Section 2.3). Note that the bottle sample salinity at 431 m available for station I6 was not used because of the discrepancy with the TS calculations for 300 m, as described in Section 2.4.

b) For stations G3, I6, I4, I3, H2, H4, H5, and H6, the corrections were computed from differences in salinities using the computed linear fits to TS characteristics and the actual measurements as outlined in method (2), Section 2.3. At these stations, data were collected to depths of 305 dbar or greater and the salinity corrections were based on 5 m classes from 280 to 305-320 dbar.

c) For stations G4, G1, I5, H7, J4, and J2, the corrections were based on differences between the computed linear TS curve and the indicated values over the deepest 15 m of the CTD station (method (3), Section 2.3). At these stations, the data was limited to depths of 275 dbar or less so that the procedure of (b) above could not be followed. Note that in some cases, adjustments were made to the derived values in order to improve agreement with corrections indicated from linear interpolation.

d) For stations G5, I1, H3, J5, F4, F3, and F1, the CTD profiles were too shallow to apply any of the methods described above. For these stations the corrections were set to those derived at the station with the least time difference.

The correct and indicated salinities used to derive the conductivity corrections are listed in Table 3 for all stations falling in categories (a), (b) and (c). A plot of these differences are provided in Figure 10.



MEAN ± STD. DEV. 2.4 ± 4.6 (N=14) 0.004 ± 0.018 (n=12) ▲ S (Probe 4-Bottle)

Notes

1. Temperature of Probe 4 corrected by +0.015°C. Temperature of Probe 5 corrected by +0.003°C.

2. Salinity of Probe 4 computed from corrected temperature by +0.015°C and corrected conductivity ratio by +0.00665.

3. The relatively large salinity errors at 10 and 15 dbars (-0.088 and -0.038) are likely due to ice crystals in cell. These points are not included in statistics.

Figure 9: The difference in temperature and salinity values at an intercomparison station for the CTD probe of the present study (probe 4) and another CTD probe.

Table 3

A summary of the correction values used for conductivity at stations in Amundsen Gulf.

Station	Type of Correction	Depths of Fit	T	S True	S Raw	S Error	Cond. R. Correction Factor
G5	d	-	-	-	-	-	1.00702
G4	c	180	-1.699	33.421	33.165	-0.256	1.00702
G3	b	280-320	0.090	34.691	34.371	-0.320	1.00840
G2	a	327	0.115	34.714	34.392	-0.322	1.00843
G1	c	245-255	-0.397	34.341	34.035	-0.306	1.00813
I6	b	280-320	0.050	34.667	34.399	-0.268	1.00703
I5	c	225-235	-0.635	34.167	34.152	-0.015	1.00035
I4	b	280-320	0.096	34.695	34.661	-0.034	1.00086
I3	b	280-310	0.082	34.689	34.625	-0.064	1.00163
I1	d	117	-1.485	-	-	-	1.00250
H1	a	290	0.033	34.652	34.438	-0.214	1.00580
H2	b	280-320	0.030	34.648	34.552	-0.096	1.00248
H3	d	84	-1.753	-	-	-	1.00200
H4	b	280-305	0.096	34.699	34.644	-0.055	1.00142
H5	b	280-320	0.062	34.670	34.593	-0.077	1.00199
H6	b	280-320	-0.025	34.610	34.476	-0.134	1.00347
H7	c	265-275	-0.247	34.456	34.309	-0.173	1.00455
J5	d	45	-1.677	-	-	-	1.01093
J4	c	179	-1.635	34.466	33.145	-0.321	1.01093
J3	a	333	0.091	34.696	34.280	-0.416	1.01093
J2	c	215-225	-0.774	34.078	33.647	-0.431	1.01093
J1	d	173	-1.559	-	-	-	1.01093
F4	d	85	-1.543	-	-	-	1.01030
F3	d	142	-1.214	-	-	-	1.01030
F1	d	99	-1.538	-	-	-	1.01030
T1	a	57	-1.594	32.574	32.222	-0.365	1.01030

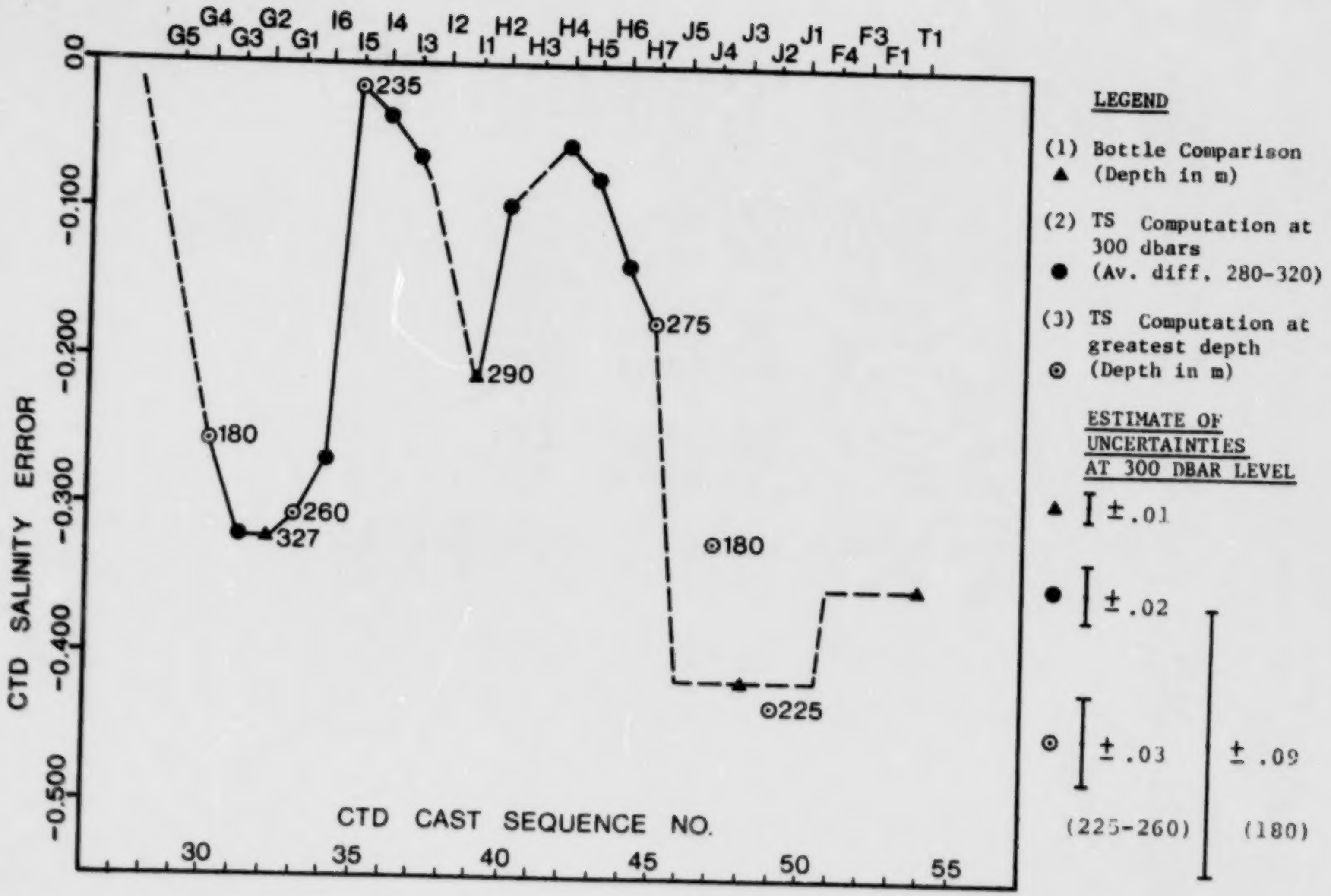


Figure 10: The estimated errors in the salinities at CTD stations in Amundsen Gulf, using the uncorrected conductivity ratios.

APPENDIX 2

CTD DATA PLOTS AND LISTINGS

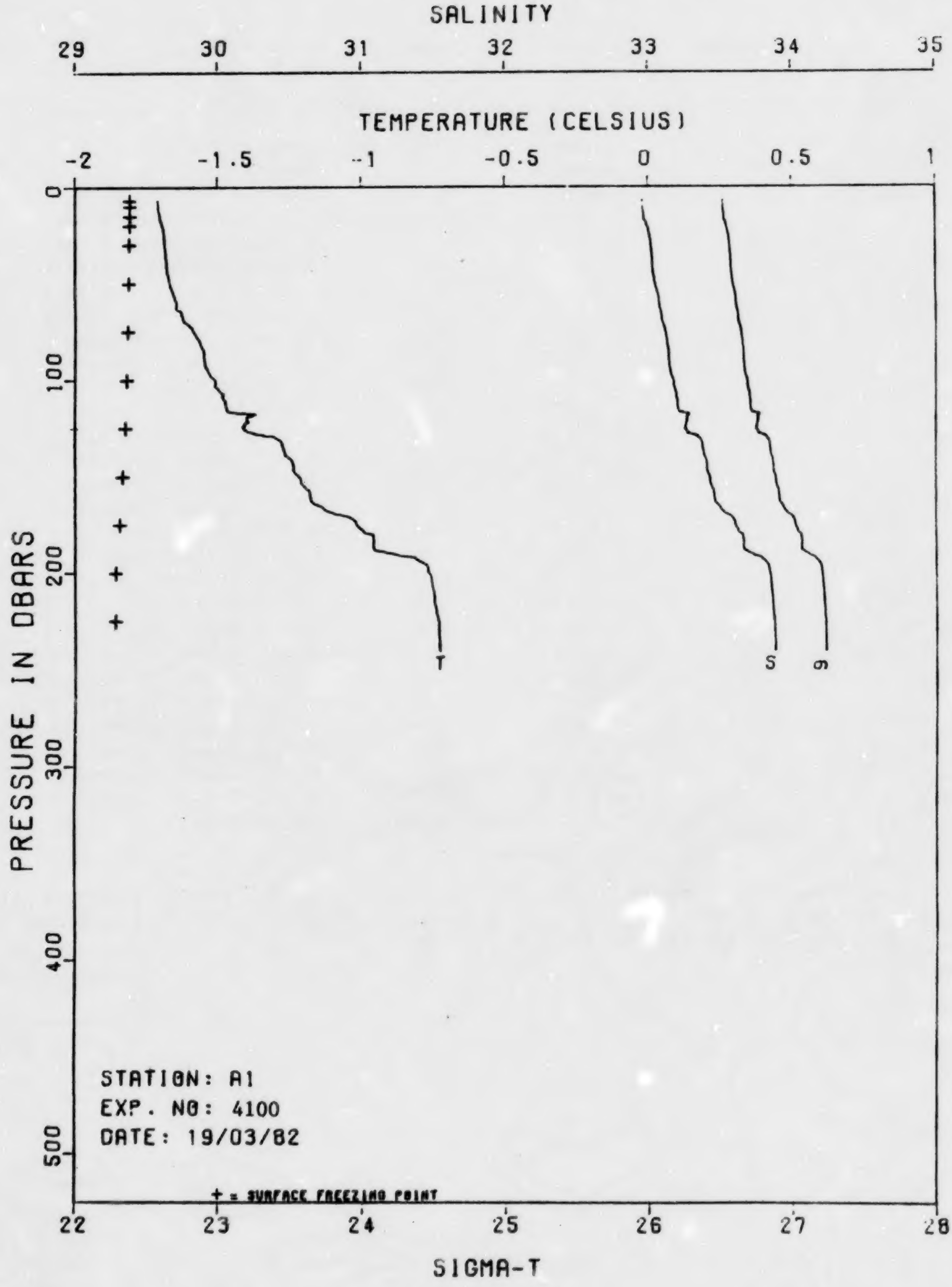
CTD PLOTS AND LISTINGS

Experiment Number	Station	Date	Time	Area
4100	A1	19 March	1908	Penny Strait
4101	BL31	20 March	2036	Resolute Passage
4102	N1	21 March	1711	Lancaster Sound
4103	N2	21 March	1830	Lancaster Sound
4104	N3	21 March	1937	Lancaster Sound
4105	N4	21 March	2028	Lancaster Sound
4106	N5	21 March	2122	Lancaster Sound
4107	N6	21 March	2236	Lancaster Sound
4108	A1	22 March	1640	Penny Strait
4109	A2	22 March	1739	Penny Strait
4110	A3	22 March	1902	Penny Strait
4111	A4	22 March	2020	Penny Strait
4112	B1	23 March	1906	Maclean Strait
4113	B2	23 March	2030	Maclean Strait
4114	B3	23 March	2138	Maclean Strait
4115	B4	24 March	0005	Maclean Strait
4116	D1	24 March	1828	West of Lougheed Island
4117	D2	24 March	1933	West of Lougheed Island
4118	C1	25 March	1749	Byam Martin Channel
4119	C2	25 March	1843	Byam Martin Channel
4120	C3	25 March	1936	Byam Martin Channel
4121	C4	25 March	2025	Byam Martin Channel
4122	C5	25 March	2132	Byam Martin Channel
4123	E1	26 March	1742	M'Clure Strait
4124	E2	26 March	1859	M'Clure Strait
4125	E3	26 March	2013	M'Clure Strait
4126	E4	26 March	2130	M'Clure Strait
4127	E5	26 March	2240	M'Clure Strait
4128	G5	29 March	1820	Amundsen Gulf
4129	G4	29 March	1923	Amundsen Gulf
4130	G3	29 March	2029	Amundsen Gulf
4131	G2	29 March	2151	Amundsen Gulf
4132	G1	29 March	2251	Amundsen Gulf
4133	I6	30 March	1816	Amundsen Gulf
4134	I5	30 March	2000	Amundsen Gulf
4135	I4	30 March	2102	Amundsen Gulf
4136	I3	30 March	2216	Amundsen Gulf
4137	I1	30 March	2339	Amundsen Gulf
4138	H1	31 March	1730	Amundsen Gulf
4139	H2	31 March	1923	Amundsen Gulf
4140	H3	31 March	2036	Amundsen Gulf
4141	H4	31 March	2153	Amundsen Gulf

CTD PLOTS AND LISTINGS (CONT'D)

Experiment Number	Station	Date	Time	Area
4142	H5	31 March	2245	Amundsen Gulf
4143	H6	31 March	2348	Amundsen Gulf
4144	H7	1 April	0044	Amundsen Gulf
4145	J5	1 April	1748	Dolphin and Union Strait
4146	J4	1 April	1828	Dolphin and Union Strait
4147	J3	1 April	1920	Dolphin and Union Strait
4148	J2	1 April	2016	Dolphin and Union Strait
4149	J1	1 April	2105	Dolphin and Union Strait
4150	F4	2 April	1735	Prince of Wales Strait
4151	F3	2 April	1843	Prince of Wales Strait
4152	F1	2 April	2002	Prince of Wales Strait
4153	F1	2 April	2210	Prince of Wales Strait
4154	M1	4 April	1719	N. M'Clintock Channel
4155	M2	4 April	1807	N. M'Clintock Channel
4156	M3	4 April	1908	N. M'Clintock Channel
4157	M4	4 April	1948	N. M'Clintock Channel
4158	M5	4 April	2041	N. M'Clintock Channel
4159	M6	4 April	2134	N. M'Clintock Channel
4160	BL46	4 April	2335	Barrow Strait
4161*	BL46	5 April	0014	Barrow Strait
4162	L6	5 April	1804	Prince Regent Inlet
4163	L5	5 April	1852	Prince Regent Inlet
4164	L4	5 April	1950	Prince Regent Inlet
4165	L3	5 April	2032	Prince Regent Inlet
4166	L2	5 April	2114	Prince Regent Inlet
4167	L1	5 April	2225	Prince Regent Inlet
4168	K1	6 April	1715	S. M'Clintock Channel
4169	K2	6 April	1823	S. M'Clintock Channel
4170	K3	6 April	1953	Larsen Sound

*Data for experiment number 4161 are not included, since these data were collected with a different CTD probe. For this location, the data from experiment number 4060 should be used.


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
300
400
500
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σ
STATION: A1
EXP. NO: 4100
DATE: 19/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE A1 EXPERIMENT 4100

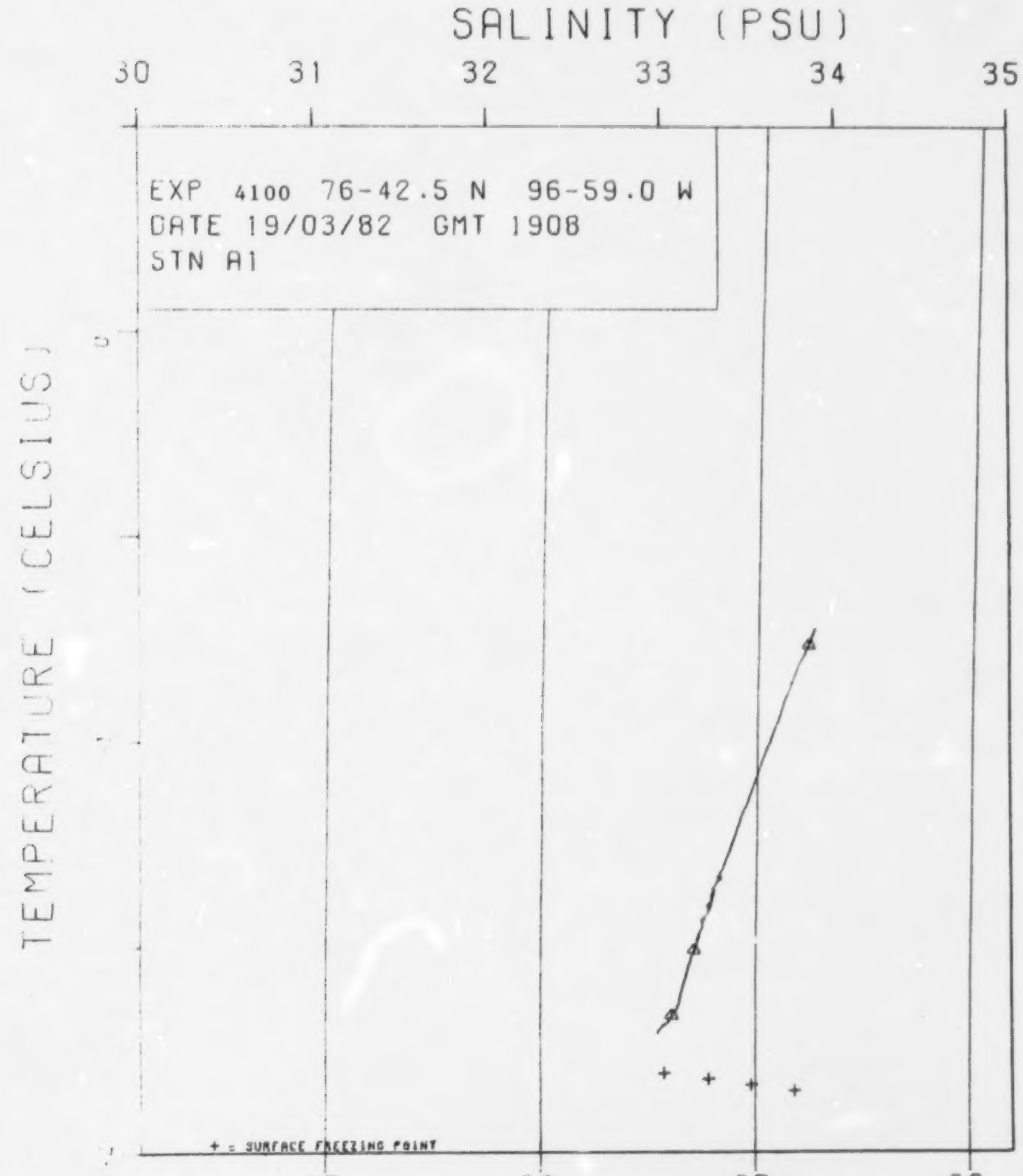
LAT.N. 76-42-30 LON.W. 96-59- 0 DATE 19/ 3/82 G.M.T. 1908

ICE THICKNESS .9 M WATER DEPTH 245 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
7.0	-1.710	.60863	32.962	26.522	.010	1438.6
8.0	-1.708	.60865	32.961	26.521	.012	1438.6
9.0	-1.707	.60870	32.962	26.522	.013	1438.6
10.0	-1.706	.60882	32.967	26.526	.015	1438.7
11.0	-1.708	.60872	32.963	26.522	.016	1438.7
12.0	-1.707	.60882	32.966	26.525	.018	1438.7
13.0	-1.704	.60891	32.969	26.527	.019	1438.7
14.0	-1.702	.60902	32.972	26.529	.021	1438.8
15.0	-1.701	.60905	32.972	26.529	.022	1438.8
16.0	-1.699	.60914	32.975	26.532	.024	1438.8
17.0	-1.700	.60914	32.975	26.533	.025	1438.8
18.0	-1.695	.60942	32.986	26.541	.027	1438.9
19.0	-1.694	.60953	32.990	26.545	.028	1438.9
20.0	-1.692	.60958	32.991	26.545	.030	1438.9
21.0	-1.691	.60975	32.999	26.552	.031	1439.0
22.0	-1.688	.60993	33.006	26.557	.033	1439.0
23.0	-1.689	.60988	33.003	26.555	.034	1439.0
24.0	-1.688	.60995	33.006	26.557	.036	1439.0
25.0	-1.686	.61005	33.011	26.561	.037	1439.1
27.5	-1.686	.61019	33.015	26.565	.041	1439.1
30.0	-1.684	.61032	33.020	26.568	.045	1439.2
32.5	-1.684	.61037	33.021	26.569	.048	1439.2
35.0	-1.681	.61054	33.026	26.573	.052	1439.3
37.5	-1.680	.61063	33.029	26.576	.055	1439.3
40.0	-1.678	.61072	33.031	26.577	.059	1439.4
42.5	-1.677	.61079	33.032	26.578	.063	1439.4
45.0	-1.675	.61092	33.036	26.581	.066	1439.5
47.5	-1.668	.61120	33.044	26.587	.070	1439.6
50.0	-1.666	.61133	33.047	26.590	.073	1439.6
55.0	-1.655	.61190	33.066	26.605	.081	1439.8
60.0	-1.643	.61238	33.078	26.614	.088	1439.9
65.0	-1.623	.61301	33.090	26.623	.095	1440.1
70.0	-1.616	.61330	33.097	26.629	.102	1440.3
75.0	-1.583	.61435	33.118	26.646	.109	1440.5
80.0	-1.562	.61503	33.132	26.656	.115	1440.7
85.0	-1.547	.61551	33.141	26.663	.122	1440.9
90.0	-1.546	.61565	33.145	26.666	.129	1441.0
95.0	-1.531	.61614	33.154	26.673	.136	1441.2
100.0	-1.506	.61701	33.175	26.690	.143	1441.4
105.0	-1.496	.61743	33.185	26.697	.149	1441.5
110.0	-1.478	.61800	33.196	26.706	.156	1441.7
115.0	-1.465	.61849	33.207	26.715	.162	1441.9
120.0	-1.400	.62071	33.263	26.758	.169	1442.3
125.0	-1.409	.62046	33.255	26.752	.175	1442.4

SITE A1 EXPERIMENT 4100

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
130.0	-1.294	.62435	33.354	26.829	.181	1443.1
135.0	-1.270	.62525	33.377	26.847	.187	1443.3
140.0	-1.253	.62590	33.393	26.859	.193	1443.5
145.0	-1.232	.62661	33.407	26.870	.199	1443.7
150.0	-1.212	.62738	33.427	26.886	.205	1443.9
155.0	-1.198	.62785	33.437	26.893	.211	1444.1
160.0	-1.176	.62869	33.456	26.909	.216	1444.3
165.0	-1.149	.62968	33.483	26.929	.222	1444.6
170.0	-1.070	.63244	33.553	26.983	.227	1445.1
175.0	-1.014	.63447	33.606	27.024	.232	1445.5
180.0	-.975	.63583	33.639	27.050	.237	1445.8
185.0	-.955	.63664	33.661	27.067	.242	1446.0
190.0	-.898	.63860	33.708	27.102	.247	1446.5
195.0	-.785	.64281	33.823	27.191	.252	1447.2
200.0	-.766	.64355	33.842	27.206	.256	1447.4
210.0	-.748	.64429	33.859	27.219	.264	1447.7
220.0	-.739	.64473	33.868	27.226	.273	1447.9
230.0	-.731	.64512	33.876	27.232	.281	1448.1
240.0	-.729	.64533	33.879	27.234	.289	1448.3
240.7	-.728	.64536	33.879	27.234	.290	1448.3


SALINITY (PSU)
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31
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35
EXP 4100 76-42.5 N 96-59.0 W
DATE 19/03/82 GMT 1908
STN A1
TEMPERATURE (CELSIUS)
+ = SURFACE FREEZING POINT
25
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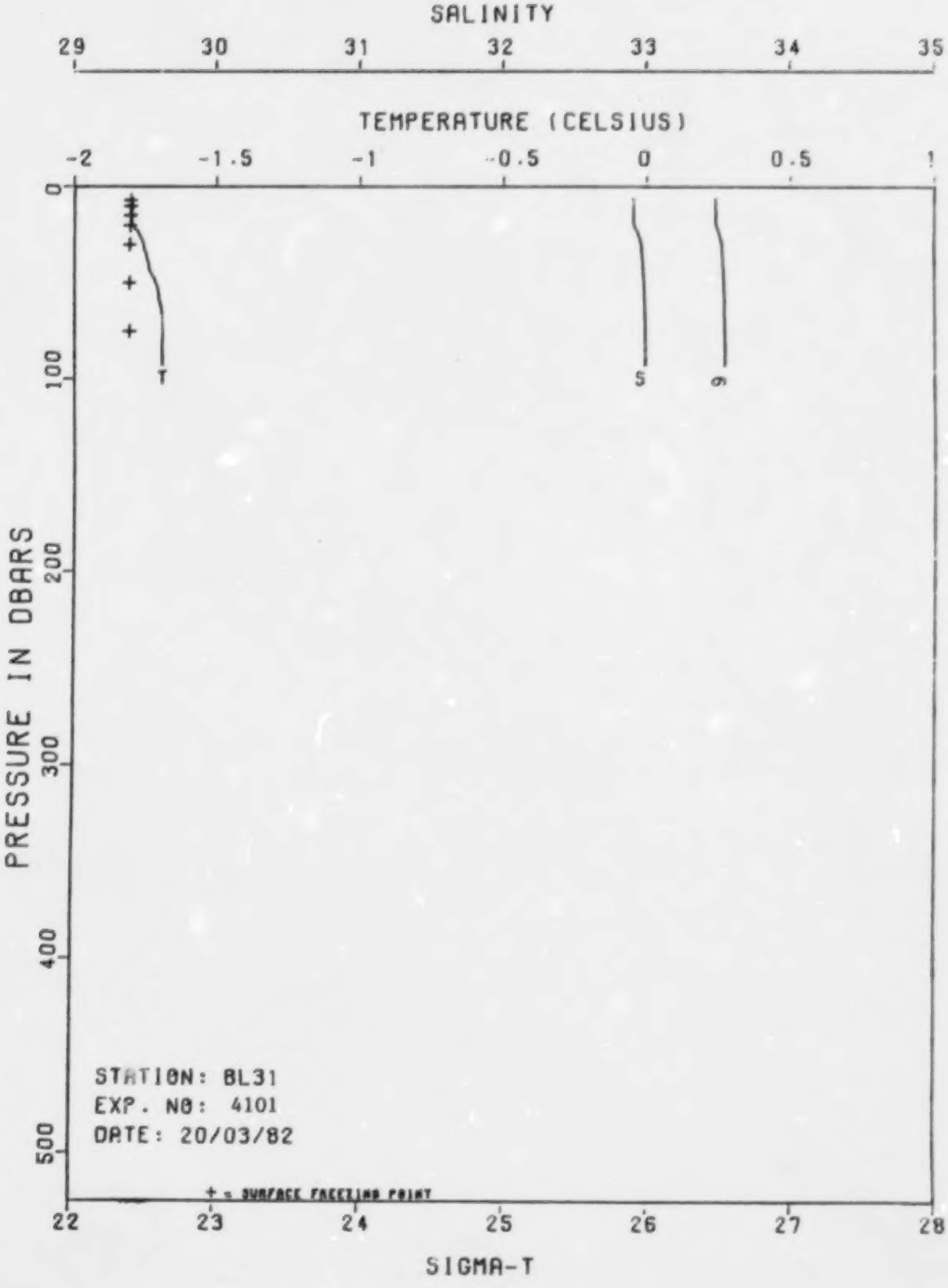
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
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100
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STATION: BL31
EXP. NO: 4101
DATE: 20/03/82
+ = SURFACE FREEZING POINT
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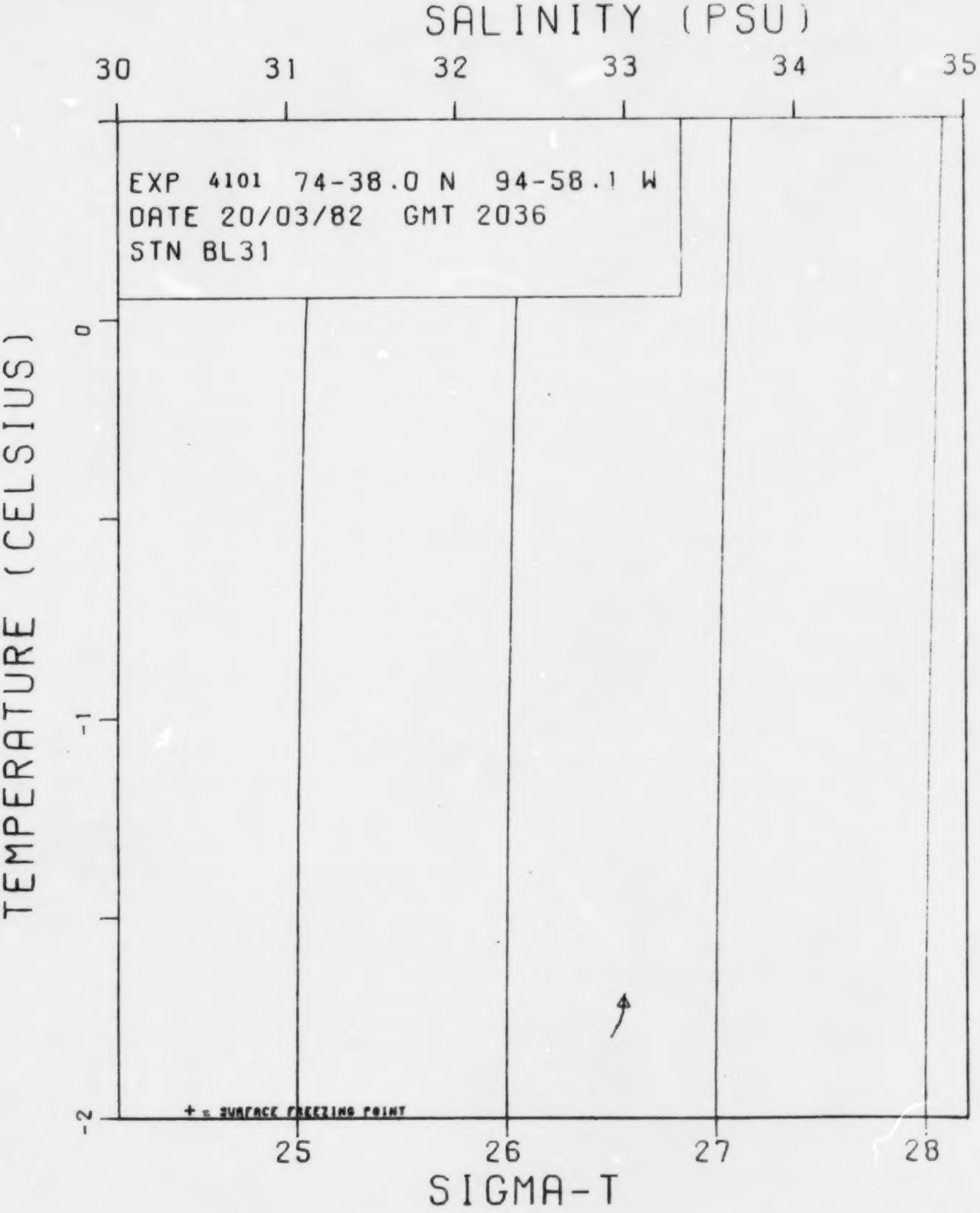
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE BL31 EXPERIMENT 4101

LAT.N. 74-38- 0 LON.W. 94-58- 5 DATE 20/ 3/82 G.M.T. 2036

ICE THICKNESS 1.6 M WATER DEPTH 103 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.9	-1.796	.60604	32.904	26.477	.009	1438.1
6.0	-1.797	.60604	32.906	26.478	.009	1438.1
7.0	-1.797	.60605	32.905	26.478	.011	1438.1
8.0	-1.797	.60606	32.905	26.477	.012	1438.1
9.0	-1.797	.60610	32.907	26.479	.014	1438.1
10.0	-1.798	.60609	32.906	26.479	.015	1438.1
11.0	-1.797	.60609	32.905	26.478	.017	1438.2
12.0	-1.797	.60609	32.904	26.477	.019	1438.2
13.0	-1.797	.60615	32.907	26.479	.020	1438.2
14.0	-1.797	.60621	32.910	26.482	.022	1438.2
15.0	-1.798	.60612	32.905	26.478	.023	1438.2
16.0	-1.797	.60620	32.909	26.480	.025	1438.2
17.0	-1.796	.60613	32.904	26.477	.026	1438.3
18.0	-1.798	.60618	32.907	26.479	.028	1438.3
19.0	-1.798	.60619	32.907	26.479	.029	1438.3
20.0	-1.796	.60630	32.911	26.483	.031	1438.3
21.0	-1.795	.60639	32.914	26.485	.032	1438.4
22.0	-1.786	.60666	32.920	26.490	.034	1438.4
23.0	-1.779	.60696	32.929	26.496	.035	1438.5
24.0	-1.774	.60716	32.936	26.502	.037	1438.5
25.0	-1.772	.60727	32.939	26.505	.038	1438.6
27.5	-1.763	.60773	32.954	26.517	.042	1438.7
30.0	-1.756	.60799	32.961	26.522	.046	1438.7
32.5	-1.755	.60806	32.963	26.523	.050	1438.8
35.0	-1.748	.60829	32.966	26.526	.054	1438.9
37.5	-1.746	.60838	32.968	26.528	.057	1438.9
40.0	-1.739	.60859	32.972	26.530	.061	1439.0
42.5	-1.738	.60867	32.973	26.532	.065	1439.1
45.0	-1.731	.60886	32.975	26.533	.068	1439.1
47.5	-1.720	.60910	32.977	26.534	.072	1439.2
50.0	-1.715	.60928	32.979	26.536	.076	1439.3
55.0	-1.706	.60951	32.980	26.537	.083	1439.4
60.0	-1.700	.60971	32.982	26.538	.091	1439.5
65.0	-1.693	.60988	32.982	26.538	.098	1439.6
70.0	-1.692	.60999	32.984	26.539	.105	1439.7
75.0	-1.690	.61007	32.983	26.539	.113	1439.8
80.0	-1.691	.61011	32.984	26.540	.120	1439.9
85.0	-1.692	.61019	32.986	26.541	.128	1440.0
90.0	-1.691	.61026	32.986	26.541	.135	1440.1
93.2	-1.690	.61031	32.986	26.541	.140	1440.1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35
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DATE 20/03/82 GMT 2036
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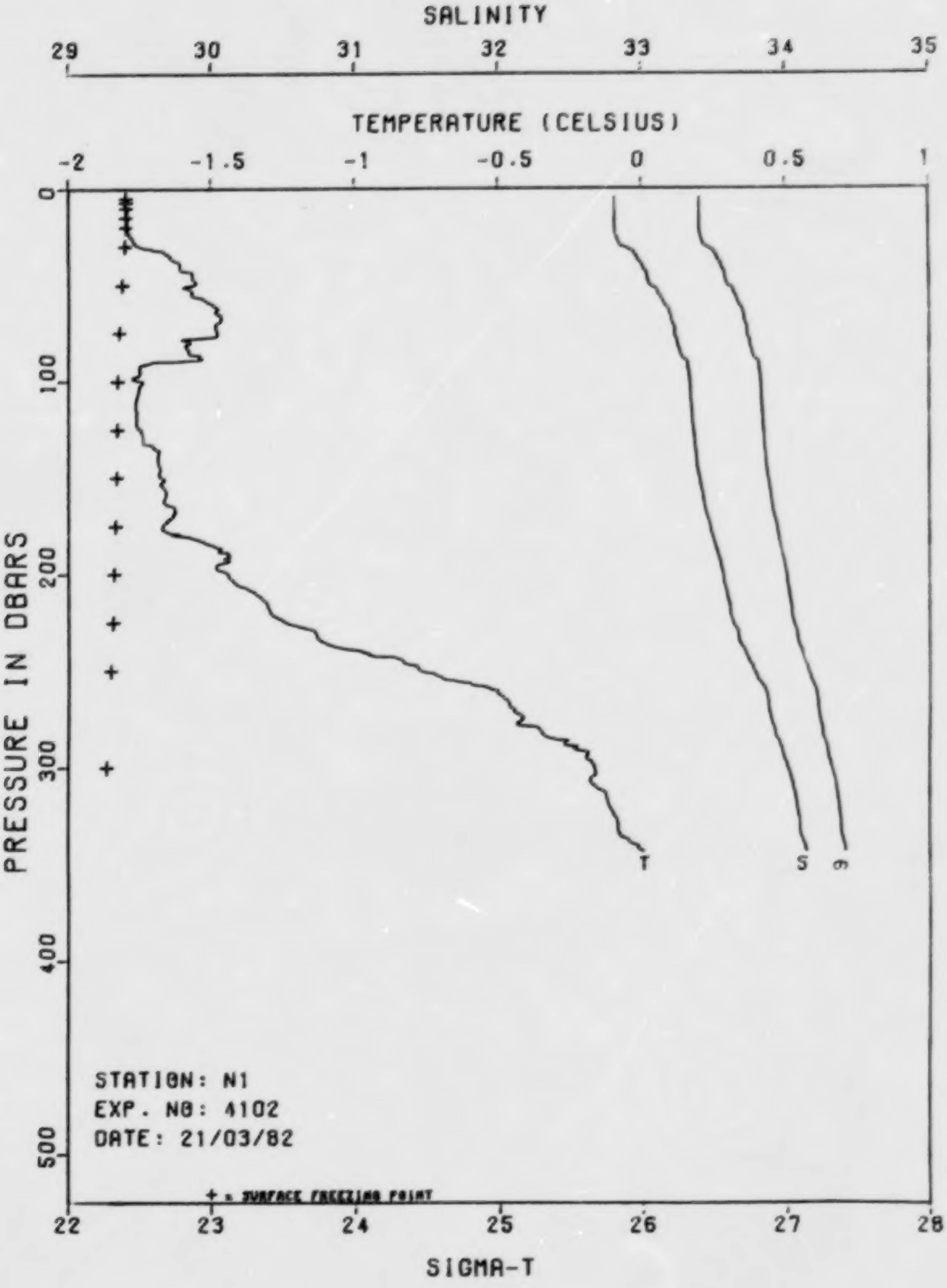
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
300
400
500
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σ
STATION: N1
EXP. NO: 4102
DATE: 21/03/82
+ = SURFACE FREEZING POINT
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23
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28
SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE N1   EXPERIMENT 4102

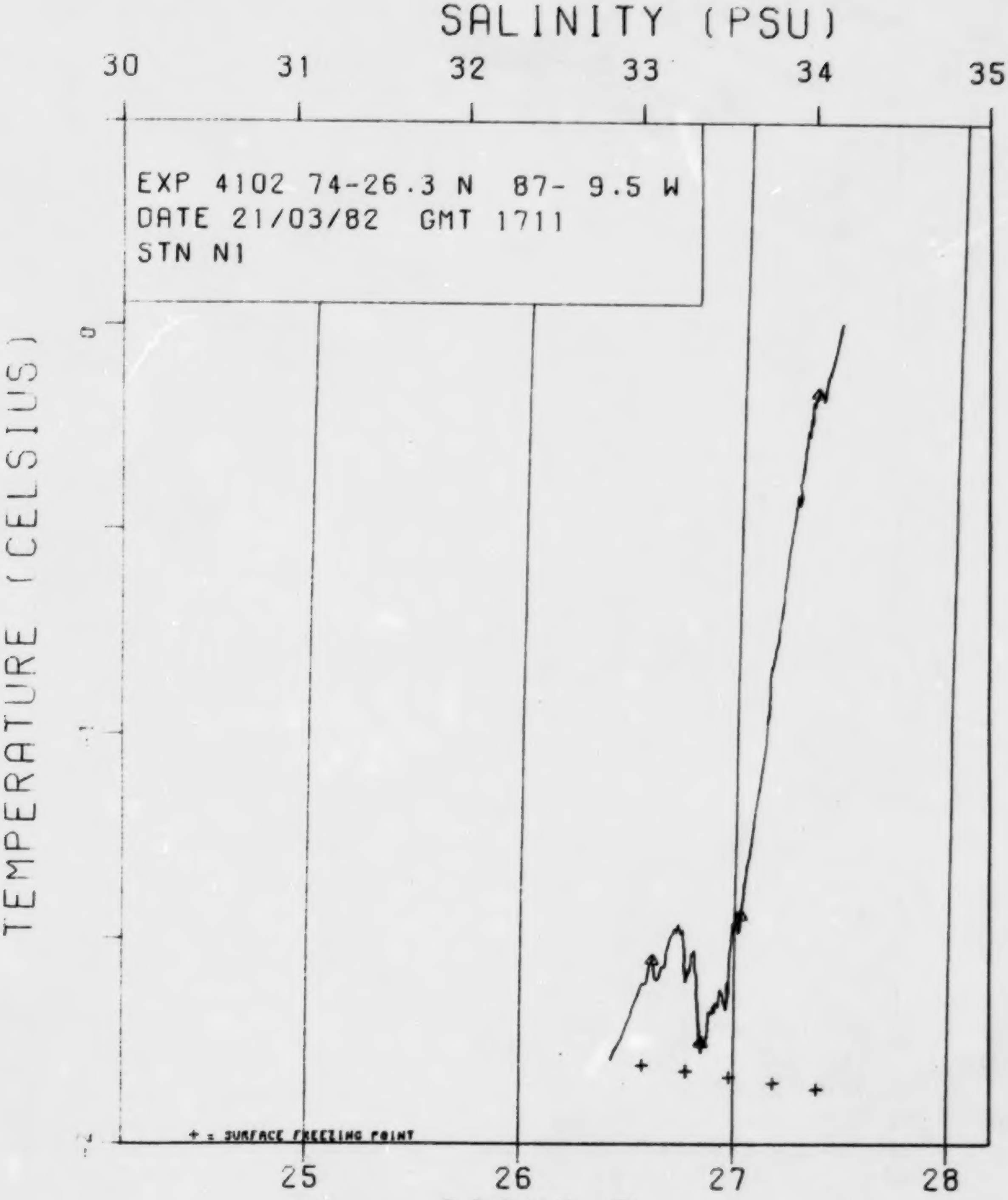
LAT.N. 74-26-17   LON.W. 67- 9-30   DATE 21/ 3/82   G.M.T. 1711

ICE THICKNESS   .9 M   WATER DEPTH   349 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.8	-1.794	.60459	32.816	26.405	.008	1438.0
5.0	-1.793	.60459	32.815	26.404	.008	1438.0
6.0	-1.794	.60462	32.817	26.406	.010	1438.0
7.0	-1.794	.60461	32.815	26.404	.011	1438.0
8.0	-1.793	.60462	32.815	26.404	.013	1438.0
9.0	-1.793	.60463	32.815	26.404	.014	1438.0
10.0	-1.794	.60463	32.815	26.404	.016	1438.0
11.0	-1.793	.60463	32.813	26.403	.018	1438.1
12.0	-1.793	.60467	32.815	26.404	.019	1438.1
13.0	-1.793	.60468	32.815	26.404	.021	1438.1
14.0	-1.793	.60468	32.815	26.404	.023	1438.1
15.0	-1.794	.60469	32.816	26.405	.024	1438.1
16.0	-1.792	.60471	32.814	26.404	.026	1438.1
17.0	-1.793	.60472	32.815	26.404	.027	1438.2
18.0	-1.792	.60474	32.814	26.404	.029	1438.2
19.0	-1.792	.60475	32.814	26.403	.031	1438.2
20.0	-1.790	.60481	32.815	26.404	.032	1438.2
21.0	-1.792	.60482	32.817	26.406	.034	1438.2
22.0	-1.791	.60481	32.815	26.404	.035	1438.2
23.0	-1.787	.60497	32.820	26.408	.037	1438.3
24.0	-1.786	.60500	32.821	26.409	.039	1438.3
25.0	-1.782	.60519	32.826	26.413	.040	1438.4
27.5	-1.771	.60567	32.841	26.425	.044	1438.5
30.0	-1.752	.60641	32.862	26.442	.048	1438.6
32.5	-1.667	.60930	32.938	26.501	.052	1439.2
35.0	-1.644	.61013	32.961	26.519	.056	1439.4
37.5	-1.627	.61077	32.978	26.533	.060	1439.5
40.0	-1.608	.61160	33.005	26.554	.063	1439.7
42.5	-1.608	.61185	33.018	26.565	.067	1439.7
45.0	-1.565	.61301	33.038	26.580	.071	1440.0
47.5	-1.564	.61309	33.040	26.582	.074	1440.1
50.0	-1.556	.61351	33.054	26.593	.078	1440.2
55.0	-1.568	.61442	33.119	26.646	.085	1440.3
60.0	-1.496	.61644	33.155	26.673	.092	1440.7
65.0	-1.482	.61743	33.195	26.706	.098	1440.9
70.0	-1.484	.61776	33.213	26.720	.105	1441.0
75.0	-1.479	.61818	33.229	26.733	.111	1441.2
80.0	-1.572	.61673	33.245	26.748	.118	1440.8
85.0	-1.576	.61709	33.267	26.767	.124	1440.9
90.0	-1.675	.61610	33.316	26.809	.130	1440.6
95.0	-1.751	.61489	33.326	26.819	.136	1440.4
100.0	-1.746	.61522	33.337	26.827	.142	1440.5
105.0	-1.753	.61523	33.342	26.832	.148	1440.5
110.0	-1.762	.61515	33.345	26.834	.154	1440.6

SITE N1 EXPERIMENT 4102

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.764	.61527	33.350	26.839	.160	1440.7
120.0	-1.761	.61548	33.357	26.844	.166	1440.8
125.0	-1.750	.61580	33.360	26.846	.172	1440.9
130.0	-1.737	.61623	33.368	26.853	.178	1441.1
135.0	-1.700	.61708	33.375	26.857	.184	1441.3
140.0	-1.686	.61752	33.381	26.862	.190	1441.5
145.0	-1.679	.61778	33.386	26.866	.196	1441.6
150.0	-1.677	.61811	33.401	26.878	.202	1441.7
155.0	-1.667	.61859	33.415	26.889	.207	1441.9
160.0	-1.660	.61901	33.429	26.900	.213	1442.0
165.0	-1.631	.61980	33.440	26.908	.219	1442.2
170.0	-1.632	.62011	33.456	26.921	.224	1442.3
175.0	-1.671	.61977	33.477	26.940	.230	1442.3
180.0	-1.621	.62104	33.493	26.951	.235	1442.6
185.0	-1.497	.62374	33.510	26.962	.241	1443.3
190.0	-1.439	.62522	33.530	26.976	.246	1443.7
195.0	-1.479	.62485	33.550	26.993	.251	1443.6
200.0	-1.440	.62589	33.564	27.004	.256	1443.9
210.0	-1.343	.62832	33.592	27.024	.267	1444.5
220.0	-1.292	.62976	33.614	27.040	.277	1445.0
230.0	-1.136	.63375	33.667	27.077	.286	1445.9
240.0	-.976	.63775	33.718	27.113	.296	1446.9
250.0	-.773	.64283	33.777	27.153	.305	1448.1
260.0	-.521	.64917	33.857	27.208	.314	1449.6
270.0	-.450	.65108	33.881	27.224	.322	1450.1
280.0	-.361	.65350	33.915	27.248	.330	1450.7
290.0	-.239	.65694	33.970	27.286	.338	1451.5
300.0	-.165	.65917	34.008	27.314	.346	1452.1
310.0	-.160	.66012	34.051	27.348	.353	1452.3
320.0	-.116	.66152	34.075	27.366	.360	1452.7
330.0	-.083	.66263	34.096	27.381	.367	1453.1
340.0	-.022	.66448	34.127	27.403	.374	1453.6
343.6	.008	.66543	34.146	27.416	.376	1453.8


SALINITY (PSU)
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EXP 4102 74-26.3 N 87- 9.5 W
DATE 21/03/82 GMT 1711
STN N1
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
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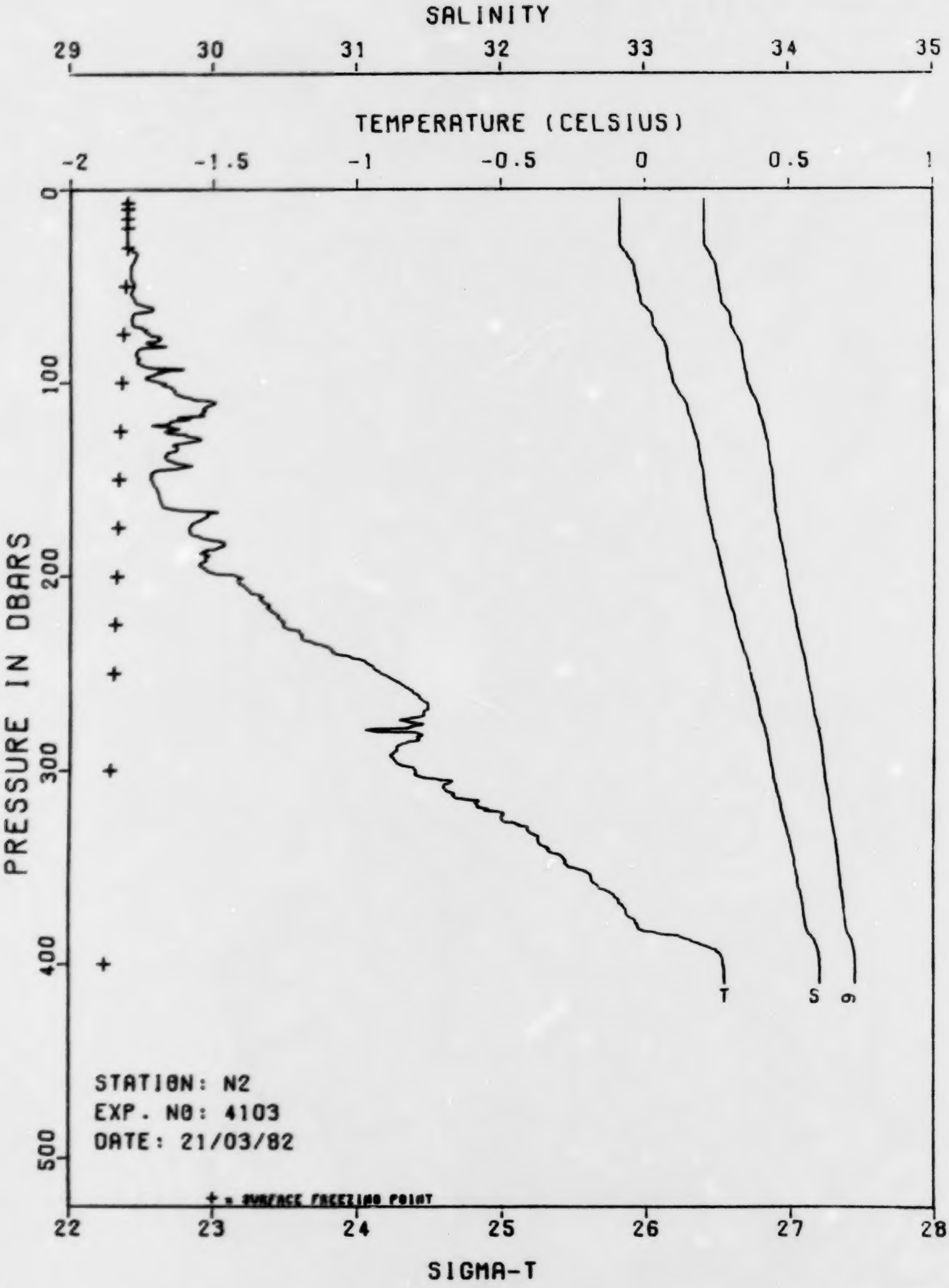
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATIØN: N2
EXP. NØ: 4103
DATE: 21/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE N2   EXPERIMENT 4103

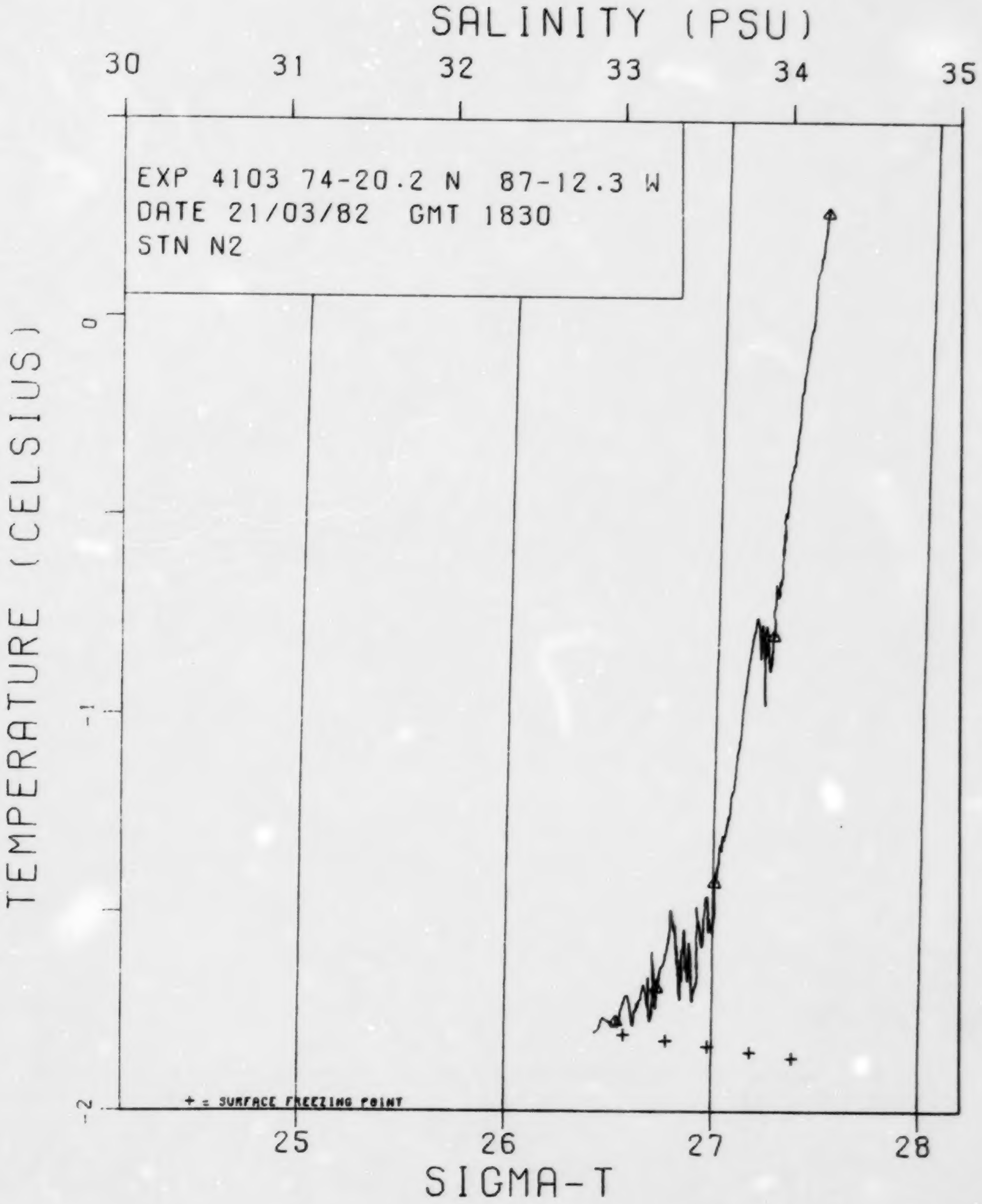
LAT.N. 74-20-12   LON.W. 67-12-17   DATE 21/ 3/82   G.M.T. 1830

ICE THICKNESS   1.4 M   WATER DEPTH   415 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.801	.60462	32.825	26.413	.008	1437.9
6.0	-1.801	.60465	32.826	26.413	.010	1438.0
7.0	-1.801	.60466	32.826	26.414	.011	1438.0
8.0	-1.800	.60467	32.826	26.413	.013	1438.0
9.0	-1.800	.60467	32.825	26.413	.014	1438.0
10.0	-1.800	.60468	32.825	26.413	.016	1438.0
11.0	-1.801	.60467	32.825	26.413	.018	1438.0
12.0	-1.800	.60470	32.825	26.412	.019	1438.1
13.0	-1.800	.60472	32.826	26.413	.021	1438.1
14.0	-1.800	.60473	32.826	26.413	.022	1438.1
15.0	-1.800	.60476	32.827	26.414	.024	1438.1
16.0	-1.800	.60475	32.826	26.413	.026	1438.1
17.0	-1.801	.60476	32.827	26.414	.027	1438.1
18.0	-1.800	.60477	32.825	26.413	.029	1438.2
19.0	-1.801	.60477	32.826	26.413	.030	1438.2
20.0	-1.800	.60477	32.824	26.411	.032	1438.2
21.0	-1.800	.60477	32.824	26.412	.034	1438.2
22.0	-1.800	.60483	32.827	26.414	.035	1438.2
23.0	-1.800	.60485	32.827	26.414	.037	1438.2
24.0	-1.800	.60485	32.827	26.414	.038	1438.2
25.0	-1.800	.60486	32.826	26.413	.040	1438.3
27.5	-1.800	.60490	32.827	26.414	.044	1438.3
30.0	-1.799	.60507	32.834	26.420	.048	1438.4
32.5	-1.769	.60612	32.863	26.442	.052	1438.6
35.0	-1.769	.60650	32.883	26.459	.056	1438.7
37.5	-1.776	.60684	32.910	26.481	.060	1438.7
40.0	-1.788	.60694	32.928	26.496	.064	1438.7
42.5	-1.787	.60704	32.930	26.498	.067	1438.8
45.0	-1.786	.60718	32.936	26.503	.071	1438.8
47.5	-1.783	.60742	32.946	26.511	.075	1438.9
50.0	-1.773	.60772	32.951	26.515	.079	1439.0
55.0	-1.786	.60772	32.963	26.524	.086	1439.0
60.0	-1.750	.60870	32.978	26.536	.094	1439.3
65.0	-1.782	.60935	33.048	26.594	.101	1439.3
70.0	-1.783	.60945	33.053	26.598	.108	1439.4
75.0	-1.722	.61121	33.086	26.623	.115	1439.8
80.0	-1.733	.61197	33.141	26.668	.122	1439.9
85.0	-1.772	.61145	33.150	26.676	.129	1439.8
90.0	-1.766	.61180	33.162	26.686	.136	1440.0
95.0	-1.675	.61386	33.180	26.698	.142	1440.5
100.0	-1.686	.61392	33.193	26.709	.149	1440.6
105.0	-1.634	.61555	33.228	26.736	.155	1440.9
110.0	-1.505	.61877	33.272	26.768	.162	1441.7
115.0	-1.529	.61874	33.294	26.787	.168	1441.7

SITE N2   EXPERIMENT 4103

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.637	.61713	33.316	26.808	.174	1441.3
125.0	-1.656	.61719	33.337	26.825	.180	1441.3
130.0	-1.541	.61974	33.357	26.838	.186	1442.0
135.0	-1.626	.61838	33.370	26.852	.192	1441.7
140.0	-1.664	.61792	33.381	26.861	.198	1441.6
145.0	-1.661	.61832	33.398	26.875	.204	1441.7
150.0	-1.723	.61732	33.405	26.882	.210	1441.5
155.0	-1.699	.61794	33.412	26.888	.215	1441.7
160.0	-1.689	.61831	33.419	26.893	.221	1441.8
165.0	-1.674	.61881	33.429	26.900	.227	1442.0
170.0	-1.533	.62183	33.448	26.912	.232	1442.8
175.0	-1.585	.62117	33.463	26.926	.238	1442.6
180.0	-1.545	.62213	33.472	26.932	.243	1442.9
185.0	-1.476	.62387	33.497	26.950	.249	1443.4
190.0	-1.524	.62319	33.505	26.958	.254	1443.2
195.0	-1.545	.62315	33.523	26.973	.260	1443.7
200.0	-1.418	.62587	33.538	26.982	.265	1443.9
210.0	-1.334	.62798	33.563	26.999	.275	1444.5
220.0	-1.281	.62992	33.611	27.037	.285	1445.0
230.0	-1.199	.63217	33.645	27.062	.295	1445.6
240.0	-1.080	.63518	33.682	27.088	.305	1446.4
250.0	-.921	.63908	33.725	27.117	.314	1447.4
260.0	-.807	.64197	33.760	27.141	.323	1448.1
270.0	-.772	.64333	33.794	27.167	.332	1448.5
280.0	-.923	.64115	33.829	27.202	.341	1448.0
290.0	-.661	.64293	33.858	27.222	.349	1448.5
300.0	-.798	.64472	33.885	27.242	.357	1449.0
310.0	-.696	.64732	33.914	27.262	.365	1449.7
320.0	-.541	.65090	33.942	27.277	.373	1450.6
330.0	-.408	.65428	33.982	27.304	.381	1451.4
340.0	-.336	.65632	34.012	27.325	.388	1452.0
350.0	-.265	.65826	34.038	27.343	.396	1452.5
360.0	-.162	.66077	34.061	27.356	.403	1453.1
370.0	-.077	.66304	34.089	27.375	.410	1453.7
380.0	-.026	.66448	34.108	27.388	.416	1454.2
390.0	.190	.67013	34.182	27.436	.423	1455.4
400.0	.269	.67224	34.207	27.452	.429	1456.0
410.4	.275	.67248	34.208	27.452	.436	1456.2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EXP 4103 74-20.2 N 87-12.3 W
DATE 21/03/82 GMT 1830
STN N2
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+ = SURFACE FREEZING POINT
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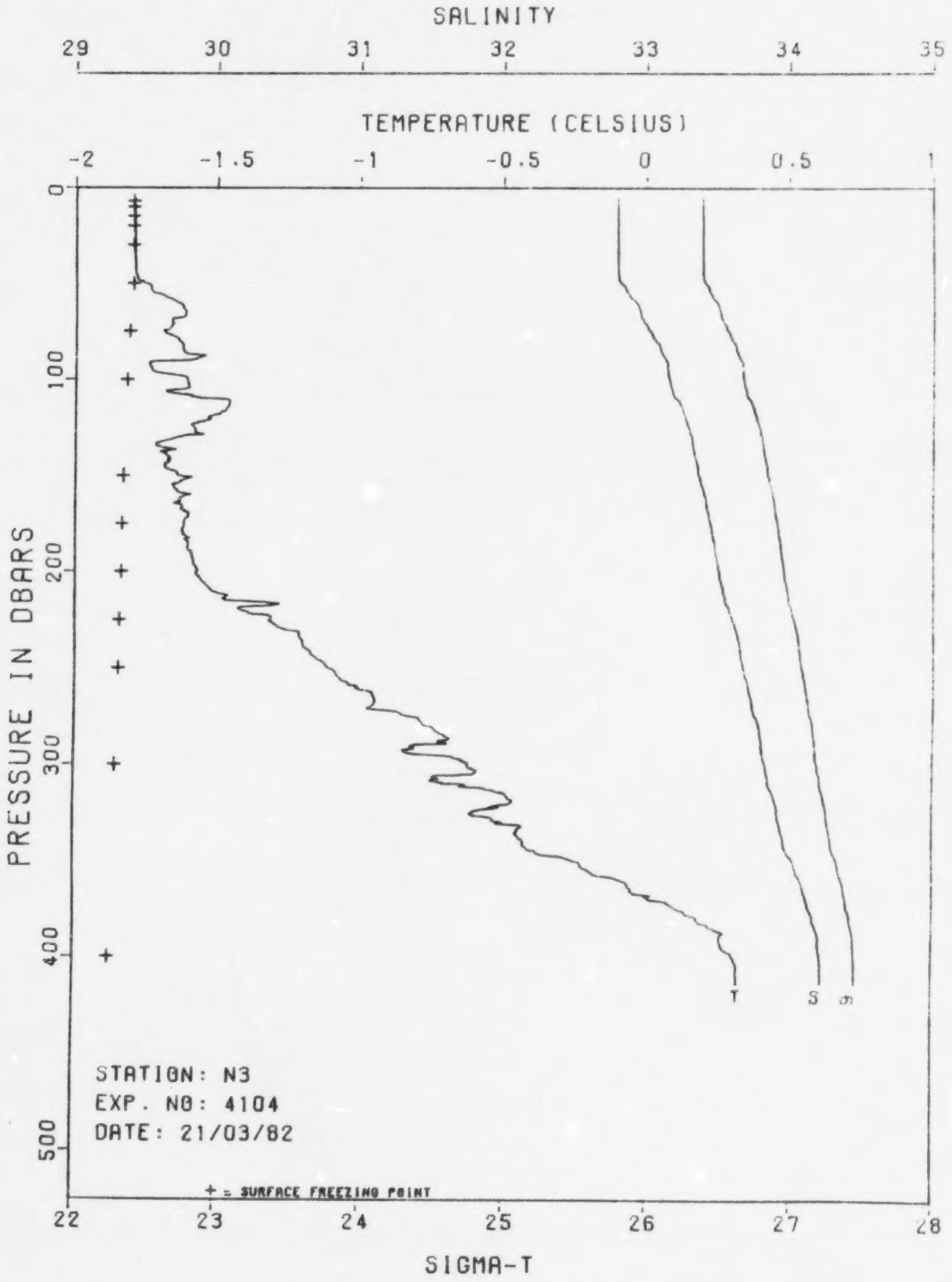
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: N3
EXP. NO: 4104
DATE: 21/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE N3   EXPERIMENT 4104

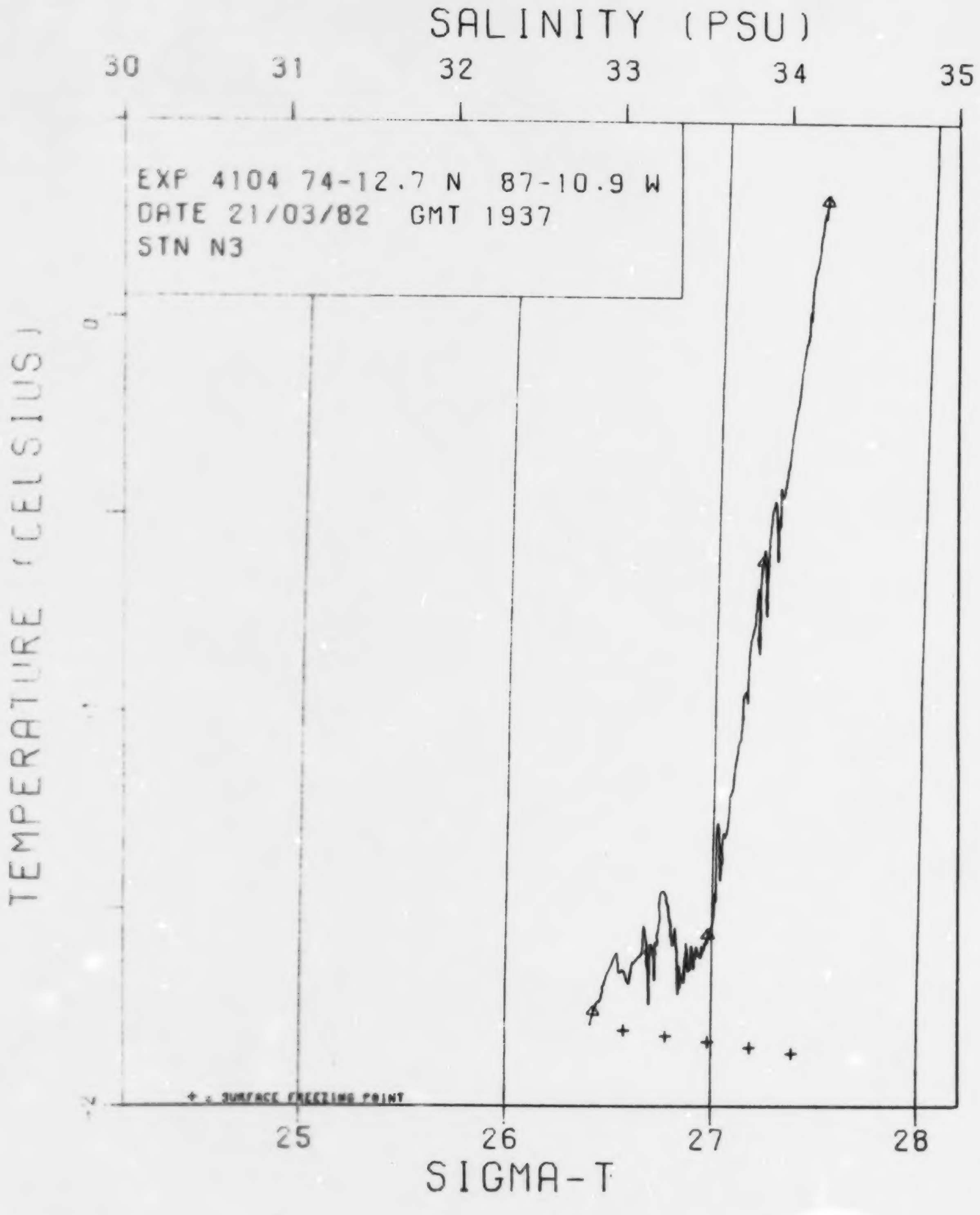
LAT.N. 74-12-42   LON.W. 87-10-53   DATE 21/ 3/82   G.M.T. 1937

ICE THICKNESS   .6 M   WATER DEPTH   417 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.7	-1.793	.60427	32.795	26.388	.009	1437.9
6.0	-1.794	.60428	32.796	26.389	.010	1437.9
7.0	-1.794	.60428	32.796	26.389	.011	1438.0
8.0	-1.794	.60429	32.796	26.389	.013	1438.0
9.0	-1.793	.60430	32.795	26.388	.015	1438.0
10.0	-1.793	.60431	32.795	26.388	.016	1438.0
11.0	-1.794	.60432	32.796	26.389	.018	1438.0
12.0	-1.794	.60433	32.796	26.388	.020	1438.0
13.0	-1.794	.60434	32.796	26.389	.021	1438.1
14.0	-1.793	.60436	32.795	26.388	.023	1438.1
15.0	-1.793	.60437	32.796	26.388	.024	1438.1
16.0	-1.794	.60438	32.796	26.389	.026	1438.1
17.0	-1.793	.60439	32.796	26.388	.028	1438.1
18.0	-1.794	.60441	32.797	26.389	.029	1438.1
19.0	-1.794	.60441	32.797	26.389	.031	1438.2
20.0	-1.793	.60442	32.795	26.388	.033	1438.2
21.0	-1.793	.60443	32.796	26.389	.034	1438.2
22.0	-1.793	.60445	32.796	26.389	.036	1438.2
23.0	-1.793	.60446	32.796	26.389	.037	1438.2
24.0	-1.793	.60447	32.796	26.389	.039	1438.2
25.0	-1.794	.60448	32.796	26.389	.041	1438.3
27.5	-1.792	.60451	32.795	26.388	.045	1438.3
30.0	-1.792	.60456	32.797	26.389	.049	1438.3
32.5	-1.793	.60458	32.797	26.390	.053	1438.4
35.0	-1.793	.60461	32.797	26.389	.057	1438.4
37.5	-1.792	.60465	32.797	26.389	.061	1438.5
40.0	-1.791	.60471	32.799	26.391	.065	1438.5
42.5	-1.790	.60476	32.798	26.390	.069	1438.6
45.0	-1.789	.60479	32.798	26.390	.073	1438.6
47.5	-1.783	.60498	32.800	26.392	.077	1438.7
50.0	-1.759	.60569	32.815	26.403	.081	1438.9
55.0	-1.726	.60715	32.862	26.441	.089	1439.2
60.0	-1.641	.60985	32.925	26.490	.097	1439.7
65.0	-1.611	.61096	32.955	26.514	.104	1440.0
70.0	-1.660	.61042	32.974	26.530	.112	1439.9
75.0	-1.692	.61078	33.028	26.575	.119	1439.9
80.0	-1.636	.61246	33.062	26.601	.126	1440.3
85.0	-1.620	.61332	33.093	26.626	.133	1440.5
90.0	-1.591	.61464	33.136	26.660	.140	1440.8
95.0	-1.727	.61233	33.147	26.672	.147	1440.2
100.0	-1.605	.61489	33.159	26.680	.154	1440.9
105.0	-1.615	.61505	33.177	26.694	.161	1441.0
110.0	-1.492	.61794	33.208	26.716	.167	1441.7
115.0	-1.466	.61921	33.251	26.751	.174	1441.9

SITE N7 EXPERIMENT 4104

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.534	.61631	33.270	26.766	.180	1441.7
125.0	-1.584	.61779	33.292	26.787	.186	1441.6
130.0	-1.632	.61736	33.317	26.809	.192	1441.5
135.0	-1.705	.61614	33.324	26.816	.198	1441.2
140.0	-1.674	.61698	33.336	26.825	.205	1441.5
145.0	-1.687	.61712	33.356	26.841	.211	1441.5
150.0	-1.637	.61826	33.364	26.847	.216	1441.8
155.0	-1.660	.61818	33.383	26.863	.222	1441.8
160.0	-1.591	.61999	33.404	26.878	.228	1442.3
165.0	-1.623	.61955	33.416	26.889	.234	1442.2
170.0	-1.599	.62035	33.434	26.902	.239	1442.5
175.0	-1.616	.62031	33.447	26.914	.245	1442.5
180.0	-1.619	.62051	33.459	26.924	.251	1442.6
185.0	-1.594	.62115	33.472	26.934	.256	1442.8
190.0	-1.587	.62161	33.482	26.941	.262	1442.9
195.0	-1.584	.62190	33.493	26.950	.267	1443.0
200.0	-1.573	.62238	33.507	26.961	.272	1443.2
210.0	-1.517	.62403	33.534	26.982	.283	1443.6
220.0	-1.415	.62677	33.576	27.013	.293	1444.3
230.0	-1.260	.63065	33.624	27.047	.304	1445.3
240.0	-1.188	.63259	33.650	27.066	.313	1445.8
250.0	-1.110	.63457	33.673	27.082	.323	1446.4
260.0	-1.006	.63724	33.707	27.105	.332	1447.1
270.0	-.963	.63871	33.738	27.130	.342	1447.5
280.0	-.765	.64344	33.785	27.160	.351	1448.7
290.0	-.809	.64315	33.812	27.184	.359	1448.7
300.0	-.619	.64722	33.830	27.190	.366	1449.7
310.0	-.633	.64752	33.856	27.212	.377	1449.9
320.0	-.474	.65159	33.907	27.246	.385	1450.8
330.0	-.498	.65157	33.927	27.264	.393	1450.9
340.0	-.426	.65366	33.960	27.287	.400	1451.5
350.0	-.254	.65818	34.021	27.329	.408	1452.5
360.0	-.086	.66248	34.076	27.365	.415	1453.5
370.0	.013	.66522	34.112	27.389	.422	1454.2
380.0	.177	.66940	34.162	27.420	.429	1455.2
390.0	.256	.67178	34.200	27.446	.435	1455.8
400.0	.303	.67298	34.212	27.453	.441	1456.1
413.9	.318	.67355	34.219	27.458	.450	1456.4


SALINITY (PSU)
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EXP 4104 74-12.7 N 87-10.9 W
DATE 21/03/82 GMT 1937
STN N3
TEMPERATURE (CELSIUS)
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+ : SURFACE FREEZING POINT
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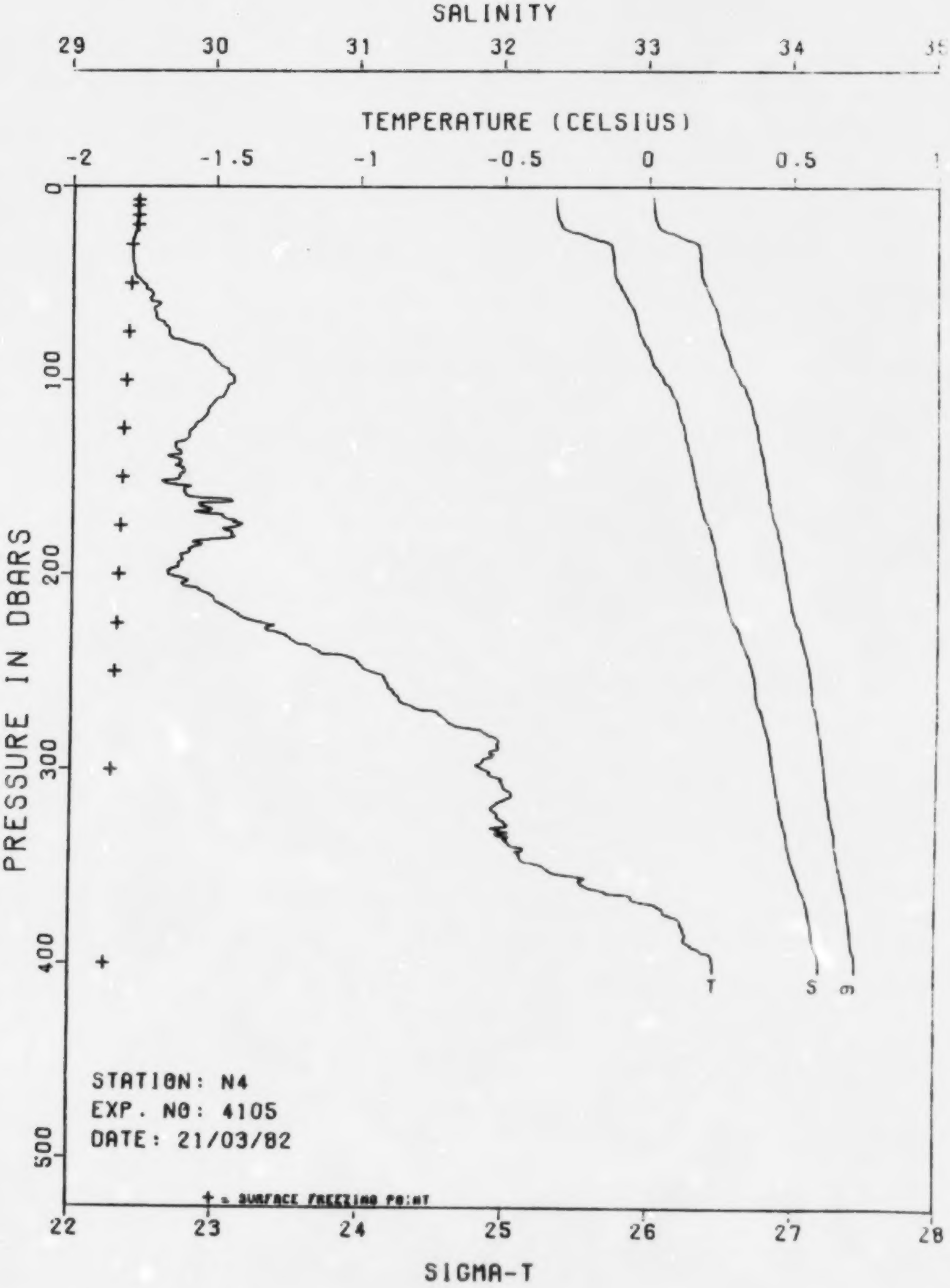
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: N4
EXP. NO: 4105
DATE: 21/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE N4 EXPERIMENT 4105

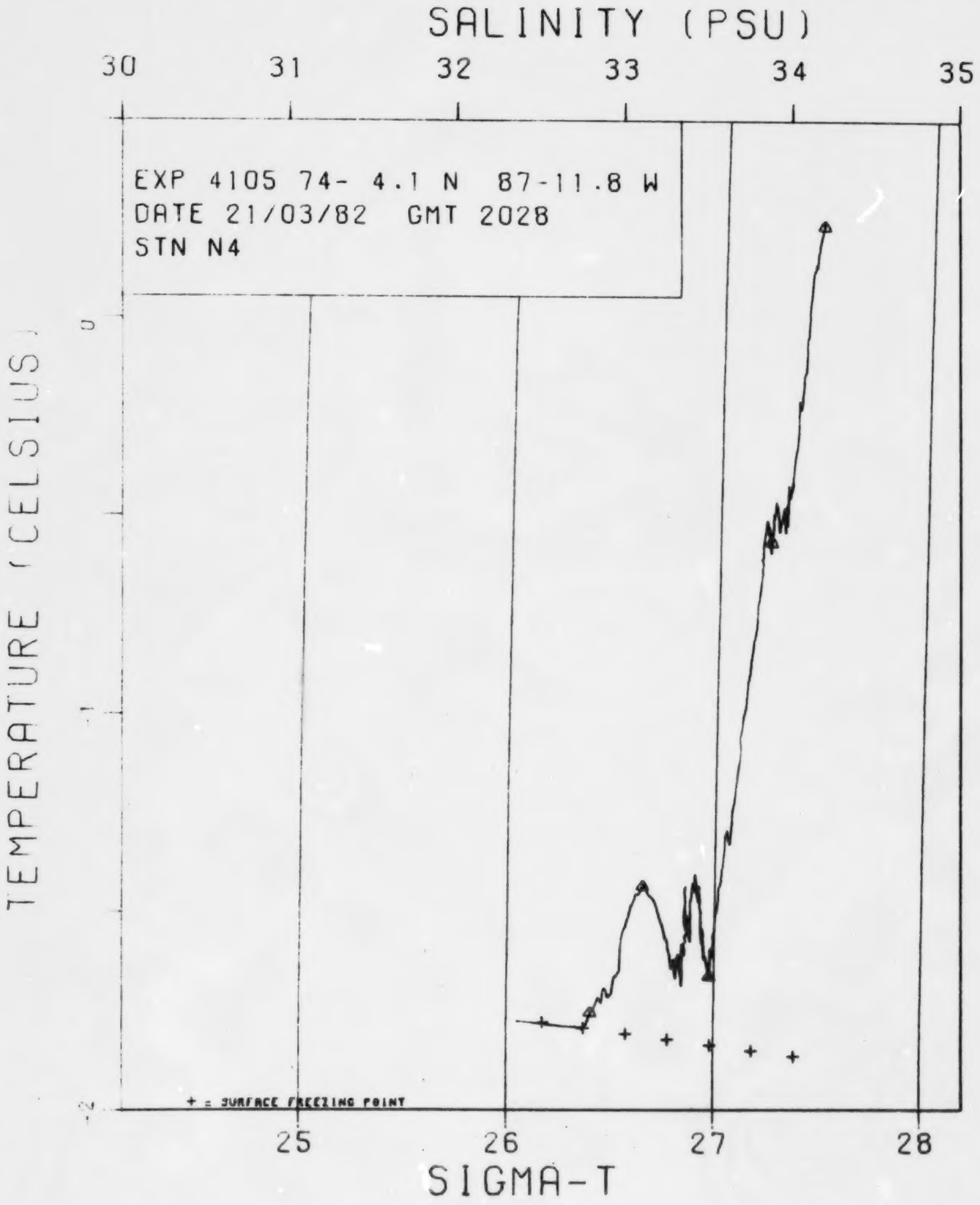
LAT.N. 74- 4- 6 LON.W. 87-11-47 DATE 21/ 3/82 G.M.T. 2028

ICE THICKNESS 1.2 M WATER DEPTH 410 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.3	-1.776	.59712	32.351	26.026	.011	1437.4
6.0	-1.776	.59713	32.351	26.027	.012	1437.4
7.0	-1.776	.59714	32.351	26.027	.014	1437.4
8.0	-1.777	.59718	32.353	26.029	.016	1437.4
9.0	-1.776	.59718	32.352	26.028	.018	1437.5
10.0	-1.776	.59725	32.356	26.031	.020	1437.5
11.0	-1.776	.59726	32.355	26.030	.022	1437.5
12.0	-1.776	.59728	32.357	26.031	.024	1437.5
13.0	-1.776	.59731	32.357	26.032	.026	1437.5
14.0	-1.776	.59739	32.362	26.036	.028	1437.5
15.0	-1.776	.59746	32.365	26.036	.030	1437.6
16.0	-1.777	.59749	32.367	26.040	.031	1437.6
17.0	-1.777	.59755	32.369	26.042	.033	1437.6
18.0	-1.777	.59769	32.378	26.048	.035	1437.6
19.0	-1.777	.59782	32.385	26.054	.037	1437.7
20.0	-1.779	.59791	32.392	26.060	.039	1437.7
21.0	-1.778	.59806	32.400	26.066	.041	1437.7
22.0	-1.778	.59832	32.414	26.078	.043	1437.7
23.0	-1.782	.59894	32.455	26.111	.045	1437.8
24.0	-1.784	.59979	32.507	26.154	.047	1437.9
25.0	-1.786	.60039	32.545	26.184	.049	1437.9
27.5	-1.791	.60197	32.642	26.264	.053	1438.1
30.0	-1.793	.60359	32.740	26.343	.057	1438.3
32.5	-1.791	.60374	32.745	26.347	.062	1438.3
35.0	-1.793	.60385	32.752	26.353	.066	1438.4
37.5	-1.792	.60390	32.752	26.353	.070	1438.4
40.0	-1.789	.60408	32.758	26.356	.074	1438.5
42.5	-1.785	.60422	32.761	26.360	.078	1438.5
45.0	-1.785	.60428	32.762	26.361	.082	1438.6
47.5	-1.770	.60478	32.774	26.371	.086	1438.7
50.0	-1.753	.60542	32.792	26.384	.091	1438.9
55.0	-1.723	.60668	32.831	26.415	.099	1439.1
60.0	-1.700	.60770	32.862	26.441	.107	1439.4
65.0	-1.712	.60817	32.901	26.472	.114	1439.4
70.0	-1.680	.60919	32.923	26.489	.122	1439.7
75.0	-1.662	.60970	32.931	26.495	.130	1439.9
80.0	-1.609	.61124	32.963	26.520	.137	1440.3
85.0	-1.525	.61360	33.003	26.551	.145	1440.8
90.0	-1.501	.61436	33.019	26.563	.152	1441.0
95.0	-1.456	.61602	33.064	26.598	.159	1441.4
100.0	-1.436	.61706	33.100	26.627	.166	1441.6
105.0	-1.463	.61744	33.150	26.668	.173	1441.6
110.0	-1.501	.61744	33.189	26.701	.180	1441.6
115.0	-1.527	.61726	33.203	26.713	.186	1441.6

SITE N4 EXPERIMENT 4105

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.546	.61725	33.221	26.729	.193	1441.6
125.0	-1.582	.61703	33.246	26.749	.199	1441.5
130.0	-1.597	.61690	33.251	26.754	.206	1441.5
135.0	-1.640	.61648	33.271	26.772	.212	1441.5
140.0	-1.648	.61677	33.294	26.790	.218	1441.5
145.0	-1.611	.61770	33.305	26.798	.224	1441.8
150.0	-1.626	.61773	33.321	26.811	.230	1441.8
155.0	-1.590	.61862	33.330	26.818	.236	1442.1
160.0	-1.597	.61882	33.347	26.832	.242	1442.2
165.0	-1.557	.61997	33.367	26.847	.248	1442.5
170.0	-1.471	.62193	33.364	26.858	.254	1443.0
175.0	-1.414	.62360	33.416	26.883	.260	1443.4
180.0	-1.446	.62332	33.432	26.897	.266	1443.3
185.0	-1.554	.62172	33.455	26.919	.271	1442.9
190.0	-1.622	.62063	33.464	26.927	.277	1442.7
195.0	-1.631	.62076	33.478	26.939	.282	1442.8
200.0	-1.665	.62043	33.494	26.953	.288	1442.7
210.0	-1.522	.62382	33.528	26.976	.298	1443.6
220.0	-1.426	.62635	33.563	27.003	.309	1444.3
230.0	-1.282	.63026	33.627	27.050	.319	1445.2
240.0	-1.137	.63395	33.674	27.083	.329	1446.1
250.0	-.958	.63832	33.722	27.116	.338	1447.2
260.0	-.883	.64024	33.744	27.131	.347	1447.7
270.0	-.736	.64388	33.767	27.160	.356	1448.6
280.0	-.574	.64778	33.823	27.183	.365	1449.6
290.0	-.522	.64933	33.848	27.201	.374	1450.0
300.0	-.563	.64902	33.871	27.221	.382	1450.0
310.0	-.492	.65084	33.890	27.233	.390	1450.6
320.0	-.541	.65049	33.918	27.258	.398	1450.5
330.0	-.543	.65111	33.950	27.284	.406	1450.7
340.0	-.444	.65346	33.969	27.295	.414	1451.4
350.0	-.351	.65611	34.011	27.325	.421	1452.0
360.0	-.207	.65979	34.055	27.354	.428	1452.9
370.0	.039	.66560	34.106	27.383	.435	1454.3
380.0	.121	.66787	34.137	27.403	.442	1454.9
390.0	.152	.66680	34.149	27.411	.449	1455.2
400.0	.232	.67118	34.189	27.439	.455	1455.8
404.3	.232	.67126	34.191	27.441	.456	1455.9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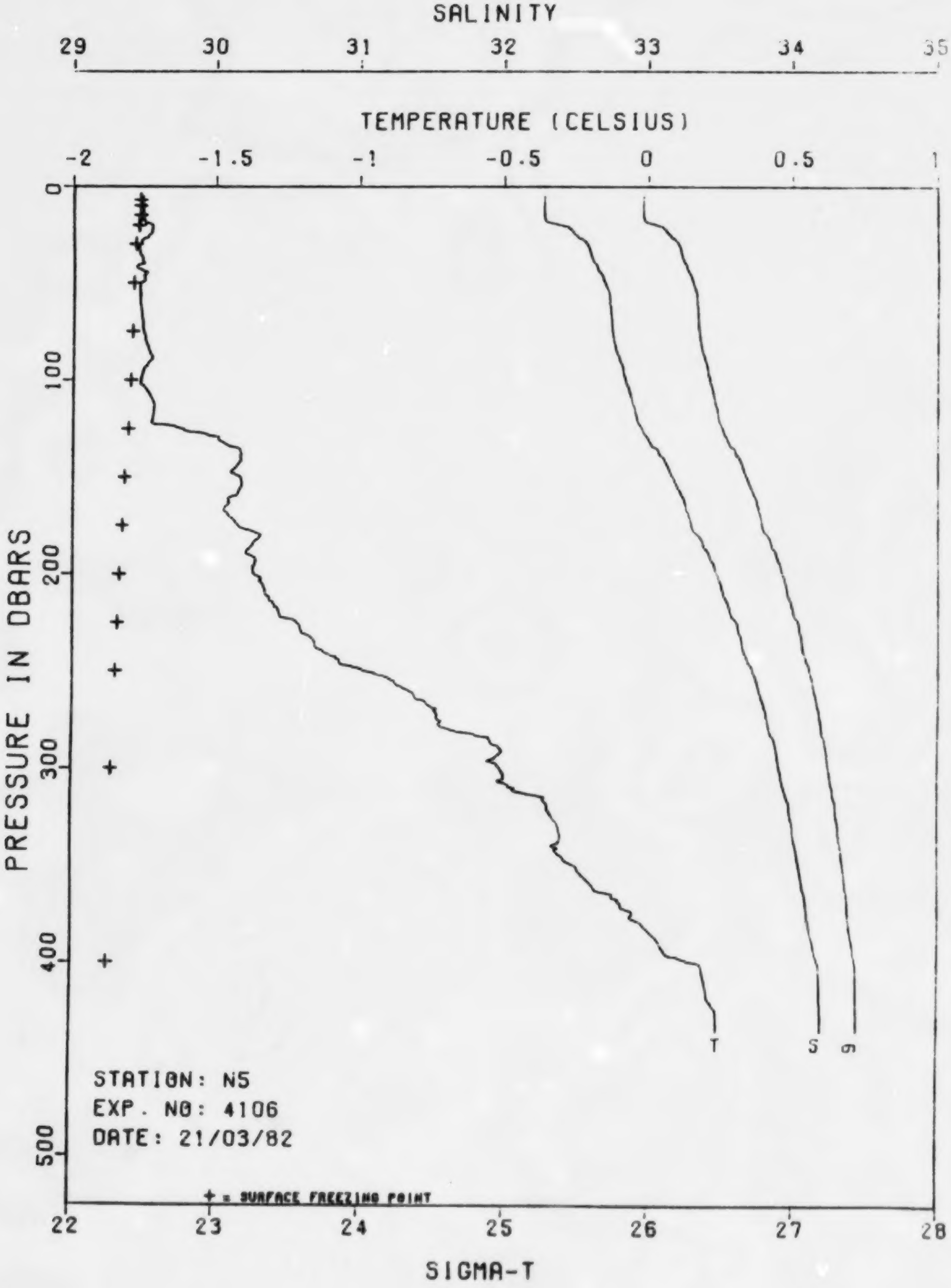
SIGMA-T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PRESSURE IN DBARS
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STATION: N5
EXP. NO: 4106
DATE: 21/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE N5 EXPERIMENT 4106

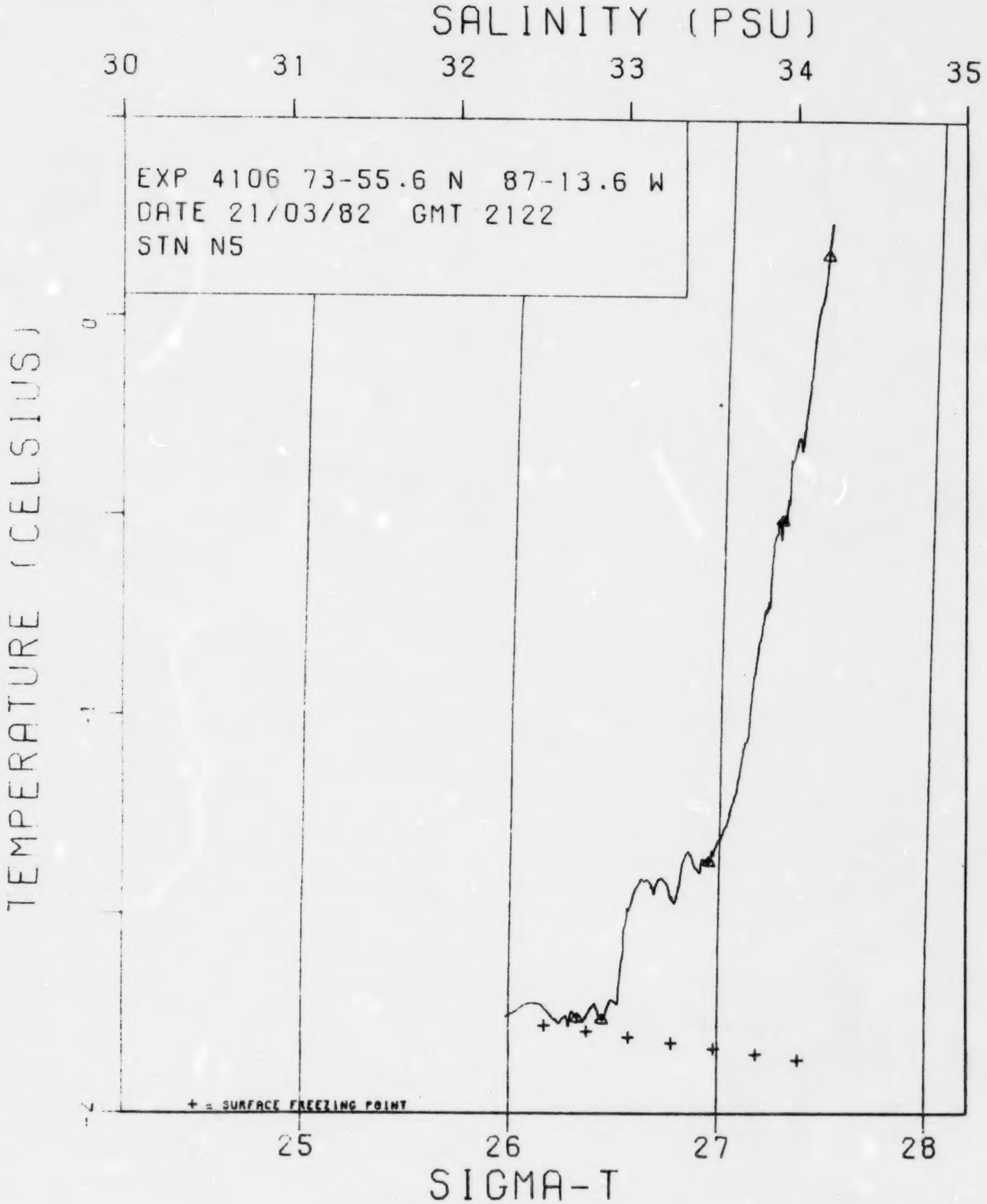
LAT.N. 73-55-35 LON.W. 87-13-36 DATE 21/ 3/82 G.M.T. 2122

ICE THICKNESS 1.6 M WATER DEPTH 440 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.3	-1.759	.59614	32.273	25.963	.011	1437.4
6.0	-1.758	.59615	32.273	25.963	.012	1437.4
7.0	-1.757	.59615	32.272	25.962	.014	1437.4
8.0	-1.757	.59617	32.272	25.962	.016	1437.4
9.0	-1.757	.59620	32.272	25.962	.018	1437.4
10.0	-1.756	.59620	32.272	25.962	.020	1437.4
11.0	-1.757	.59621	32.273	25.963	.022	1437.5
12.0	-1.756	.59623	32.272	25.962	.024	1437.5
13.0	-1.757	.59623	32.272	25.962	.026	1437.5
14.0	-1.757	.59626	32.273	25.963	.028	1437.5
15.0	-1.757	.59626	32.272	25.962	.030	1437.5
16.0	-1.756	.59631	32.274	25.964	.033	1437.6
17.0	-1.756	.59644	32.281	25.969	.035	1437.6
18.0	-1.753	.59652	32.282	25.970	.037	1437.6
19.0	-1.743	.59750	32.329	26.008	.039	1437.7
20.0	-1.726	.59887	32.391	26.056	.041	1437.9
21.0	-1.724	.59979	32.442	26.100	.042	1438.0
22.0	-1.725	.59998	32.454	26.110	.044	1438.1
23.0	-1.726	.60019	32.467	26.120	.046	1438.1
24.0	-1.727	.60033	32.477	26.128	.048	1438.1
25.0	-1.733	.60047	32.491	26.140	.050	1438.1
27.5	-1.759	.60087	32.542	26.181	.055	1438.1
30.0	-1.764	.60131	32.572	26.206	.059	1438.2
32.5	-1.775	.60138	32.586	26.218	.064	1438.2
35.0	-1.770	.60162	32.593	26.223	.068	1438.2
37.5	-1.760	.60207	32.608	26.235	.072	1438.4
40.0	-1.752	.60259	32.629	26.252	.077	1438.5
42.5	-1.781	.60232	32.643	26.264	.081	1438.4
45.0	-1.742	.60339	32.662	26.279	.086	1438.6
47.5	-1.755	.60353	32.683	26.296	.090	1438.6
50.0	-1.767	.60354	32.696	26.307	.094	1438.6
55.0	-1.768	.60405	32.723	26.329	.103	1438.8
60.0	-1.768	.60416	32.729	26.333	.111	1438.9
65.0	-1.763	.60445	32.735	26.339	.119	1439.0
70.0	-1.757	.60470	32.742	26.344	.128	1439.1
75.0	-1.755	.60487	32.746	26.347	.136	1439.2
80.0	-1.749	.60523	32.758	26.357	.144	1439.3
85.0	-1.737	.60575	32.772	26.368	.153	1439.5
90.0	-1.731	.60639	32.801	26.391	.161	1439.6
95.0	-1.757	.60631	32.821	26.409	.169	1439.6
100.0	-1.764	.60651	32.838	26.422	.177	1439.7
105.0	-1.742	.60740	32.864	26.443	.185	1439.9
110.0	-1.722	.60814	32.883	26.458	.192	1440.1
115.0	-1.717	.60864	32.904	26.475	.200	1440.2

SITE N5 EXPERIMENT 4106

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.722	.60885	32.919	26.487	.208	1440.3
125.0	-1.623	.61134	32.953	26.512	.215	1440.9
130.0	-1.489	.61461	32.995	26.543	.223	1441.7
135.0	-1.425	.61684	33.054	26.589	.230	1442.2
140.0	-1.415	.61798	33.106	26.631	.237	1442.4
145.0	-1.429	.61819	33.132	26.652	.244	1442.4
150.0	-1.413	.61921	33.171	26.684	.251	1442.6
155.0	-1.409	.61978	33.197	26.705	.257	1442.8
160.0	-1.432	.61995	33.230	26.732	.264	1442.8
165.0	-1.461	.61989	33.255	26.754	.270	1442.8
170.0	-1.453	.62054	33.282	26.775	.277	1442.9
175.0	-1.422	.62148	33.299	26.788	.283	1443.2
180.0	-1.339	.62394	33.349	26.826	.289	1443.7
185.0	-1.372	.62386	33.378	26.851	.295	1443.7
190.0	-1.385	.62445	33.423	26.888	.301	1443.8
195.0	-1.363	.62541	33.453	26.911	.306	1444.0
200.0	-1.367	.62574	33.474	26.928	.312	1444.1
210.0	-1.326	.62733	33.516	26.961	.323	1444.5
220.0	-1.279	.62921	33.567	27.001	.333	1445.0
230.0	-1.202	.63178	33.625	27.046	.343	1445.6
240.0	-1.123	.63399	33.660	27.072	.353	1446.2
250.0	-.977	.63789	33.718	27.114	.363	1447.1
260.0	-.829	.64163	33.765	27.146	.372	1448.0
270.0	-.745	.64411	33.808	27.177	.381	1448.6
280.0	-.684	.64585	33.835	27.197	.389	1449.1
290.0	-.506	.65033	33.888	27.232	.398	1450.2
300.0	-.508	.65074	33.909	27.249	.406	1450.4
310.0	-.460	.65244	33.946	27.277	.414	1450.8
320.0	-.346	.65535	33.980	27.300	.421	1451.5
330.0	-.307	.65667	34.006	27.319	.429	1451.9
340.0	-.327	.65669	34.023	27.333	.436	1452.0
350.0	-.248	.65876	34.048	27.350	.443	1452.6
360.0	-.190	.66036	34.068	27.364	.450	1453.0
370.0	-.091	.66282	34.093	27.378	.457	1453.7
380.0	-.018	.66468	34.111	27.390	.464	1454.2
390.0	.042	.66650	34.142	27.411	.471	1454.7
400.0	.172	.66978	34.177	27.432	.477	1455.5
425.0	.238	.67170	34.197	27.445	.493	1456.2
435.8	.241	.67189	34.198	27.446	.499	1456.4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DATE 21/03/82 GMT 2122
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+ = SURFACE FREEZING POINT
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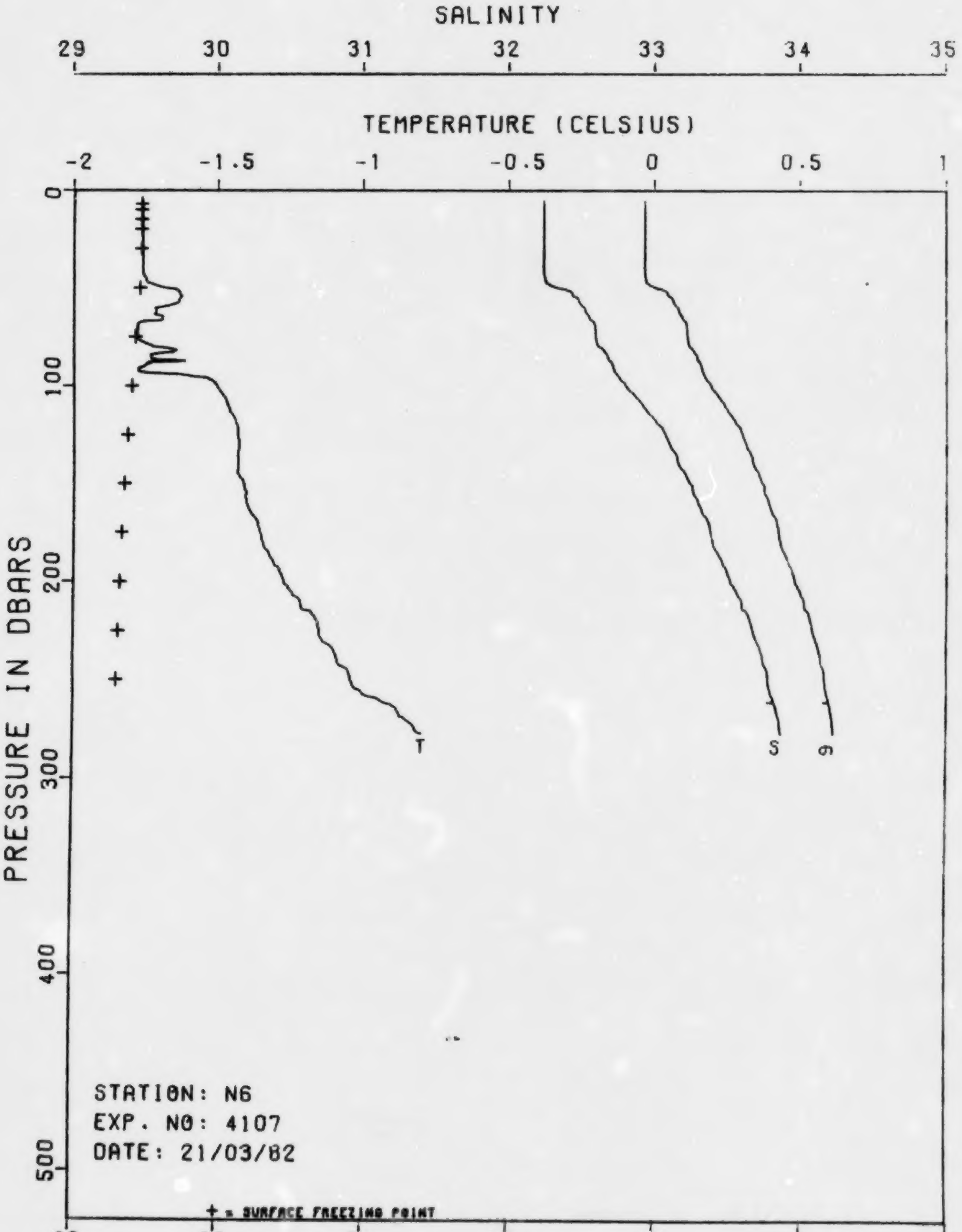
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: N6
EXP. NO: 4107
DATE: 21/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE N6 EXPERIMENT 4107

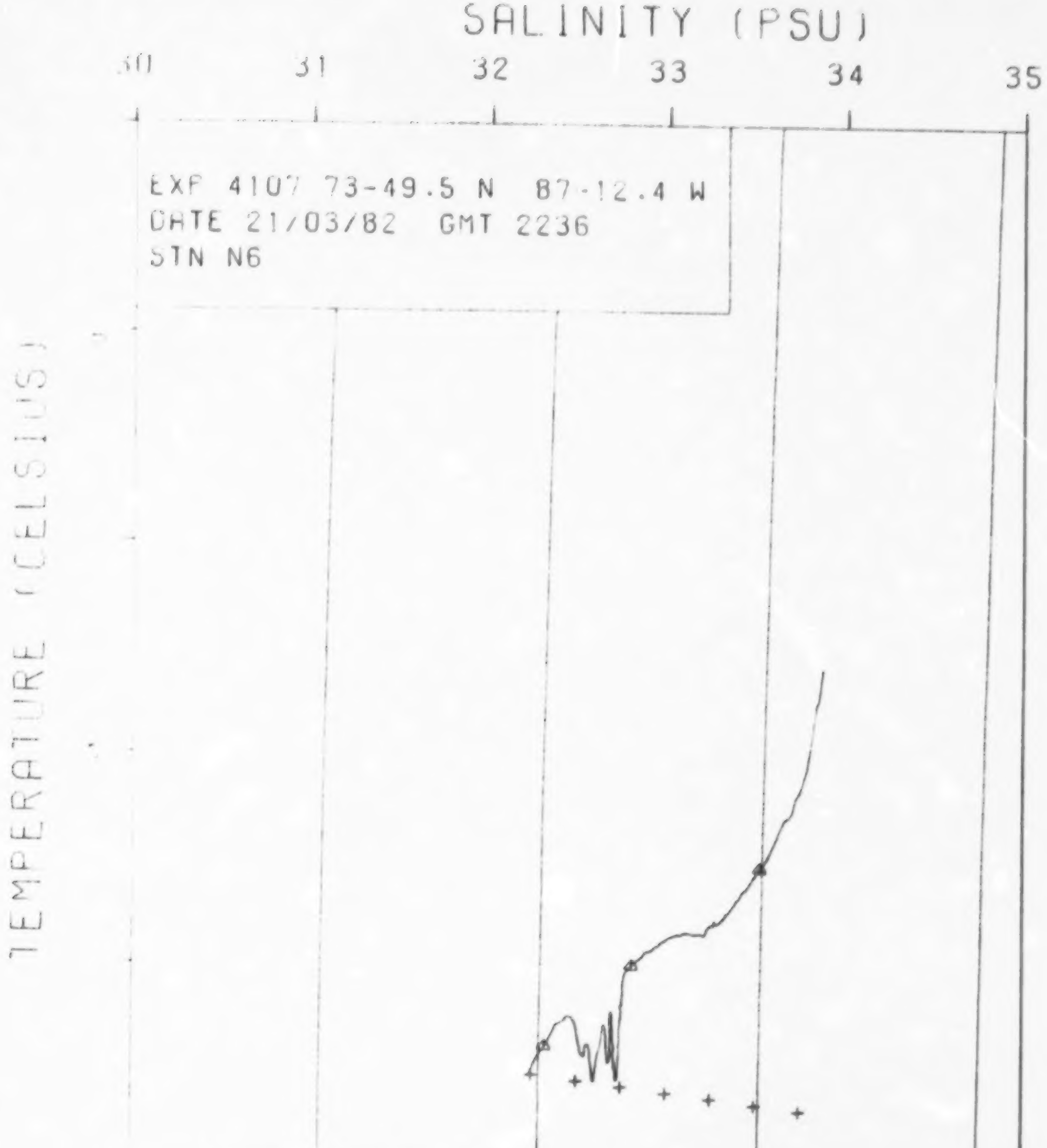
LAT.N. 73-49-30 LON.W. 87-12-23 DATE 21/ 3/82 G.M.T. 2236

ICE THICKNESS 1.5 M WATER DEPTH 283 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.5	-1.763	.59546	32.237	25.934	.011	1437.3
6.0	-1.762	.59550	32.238	25.935	.012	1437.3
7.0	-1.761	.59551	32.238	25.934	.014	1437.3
8.0	-1.762	.59553	32.239	25.935	.016	1437.3
9.0	-1.761	.59552	32.237	25.934	.019	1437.4
10.0	-1.762	.59555	32.238	25.935	.021	1437.4
11.0	-1.761	.59556	32.238	25.935	.023	1437.4
12.0	-1.761	.59557	32.238	25.935	.025	1437.4
13.0	-1.762	.59558	32.240	25.936	.027	1437.4
14.0	-1.760	.59560	32.238	25.934	.029	1437.4
15.0	-1.762	.59561	32.239	25.936	.031	1437.5
16.0	-1.761	.59562	32.239	25.935	.033	1437.5
17.0	-1.761	.59563	32.239	25.935	.035	1437.5
18.0	-1.761	.59565	32.240	25.936	.037	1437.5
19.0	-1.762	.59566	32.240	25.936	.039	1437.5
20.0	-1.760	.59567	32.238	25.934	.041	1437.5
21.0	-1.762	.59568	32.240	25.936	.043	1437.6
22.0	-1.761	.59569	32.239	25.936	.045	1437.6
23.0	-1.761	.59570	32.239	25.936	.047	1437.6
24.0	-1.761	.59572	32.239	25.935	.049	1437.6
25.0	-1.762	.59573	32.241	25.937	.051	1437.6
27.5	-1.761	.59576	32.239	25.936	.057	1437.7
30.0	-1.761	.59578	32.240	25.936	.062	1437.7
32.5	-1.761	.59582	32.240	25.936	.067	1437.7
35.0	-1.760	.59584	32.239	25.935	.072	1437.8
37.5	-1.760	.59587	32.239	25.936	.077	1437.8
40.0	-1.760	.59590	32.239	25.936	.082	1437.9
42.5	-1.760	.59595	32.241	25.937	.087	1437.9
45.0	-1.748	.59635	32.250	25.944	.093	1438.0
47.5	-1.743	.59659	32.257	25.949	.098	1438.1
50.0	-1.681	.59921	32.344	26.019	.103	1438.6
55.0	-1.629	.60241	32.474	26.123	.112	1439.1
60.0	-1.702	.60188	32.519	26.162	.122	1438.9
65.0	-1.690	.60275	32.554	26.190	.131	1439.1
70.0	-1.780	.60179	32.594	26.224	.140	1438.8
75.0	-1.779	.60196	32.599	26.228	.149	1438.9
80.0	-1.727	.60323	32.615	26.240	.157	1439.2
85.0	-1.735	.60427	32.682	26.295	.166	1439.4
90.0	-1.756	.60454	32.718	26.324	.174	1439.4
95.0	-1.597	.60818	32.755	26.351	.183	1440.3
100.0	-1.504	.61085	32.808	26.392	.191	1440.9
105.0	-1.482	.61230	32.867	26.439	.199	1441.1
110.0	-1.466	.61365	32.926	26.486	.207	1441.4
115.0	-1.447	.61490	32.976	26.526	.214	1441.6

SITE N6 EXPERIMENT 4107

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.434	.61620	33.035	26.574	.222	1441.9
125.0	-1.431	.61705	33.079	26.610	.229	1442.0
130.0	-1.426	.61771	33.109	26.634	.236	1442.2
135.0	-1.431	.61838	33.151	26.668	.243	1442.3
140.0	-1.429	.61876	33.169	26.683	.249	1442.4
145.0	-1.433	.61953	33.215	26.720	.256	1442.5
150.0	-1.407	.62060	33.246	26.744	.262	1442.8
155.0	-1.398	.62116	33.268	26.762	.269	1442.9
160.0	-1.398	.62176	33.300	26.786	.275	1443.0
165.0	-1.384	.62263	33.331	26.813	.281	1443.2
170.0	-1.360	.62383	33.372	26.846	.287	1443.4
175.0	-1.355	.62422	33.385	26.856	.293	1443.6
180.0	-1.344	.62472	33.400	26.868	.299	1443.8
185.0	-1.325	.62561	33.428	26.890	.305	1444.0
190.0	-1.306	.62667	33.468	26.922	.310	1444.2
195.0	-1.285	.62764	33.497	26.945	.316	1444.4
200.0	-1.273	.62834	33.521	26.964	.321	1444.6
210.0	-1.215	.63084	33.598	27.024	.332	1445.1
220.0	-1.160	.63300	33.655	27.069	.341	1445.7
230.0	-1.141	.63422	33.700	27.105	.351	1446.1
240.0	-1.091	.63601	33.743	27.138	.360	1446.4
250.0	-1.045	.63764	33.780	27.166	.369	1446.9
260.0	-.944	.64035	33.818	27.194	.378	1447.4
270.0	-.852	.64288	33.856	27.221	.386	1448.2
277.4	-.795	.64431	33.871	27.231	.392	1448.6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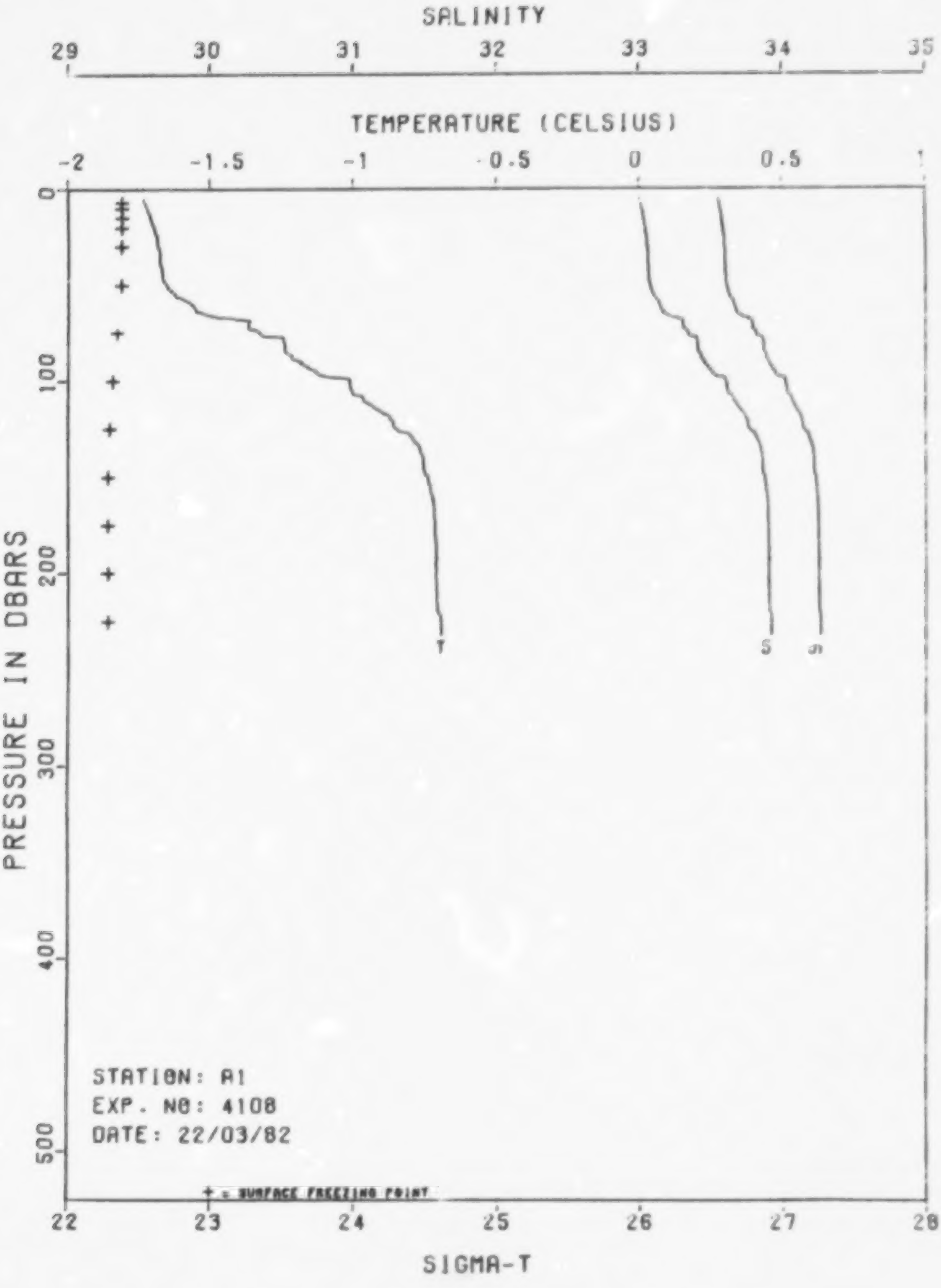
SIGMA-T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TEMPERATURE (CELSIUS)
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1
PRESSURE IN DBARS
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200
300
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STATION: A1
EXP. NO: 4108
DATE: 22/03/82
+ = SURFACE FREEZING POINT
22
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SIGMA-T

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CRUISE 015-82-022  ARCTIC ISLANDS-82   SITE A1    EXPERIMENT 4108

LAT.N. 76-42-16      LON.W.  97- 1- 0   DATE 22/ 3/82  G.M.T. 1640

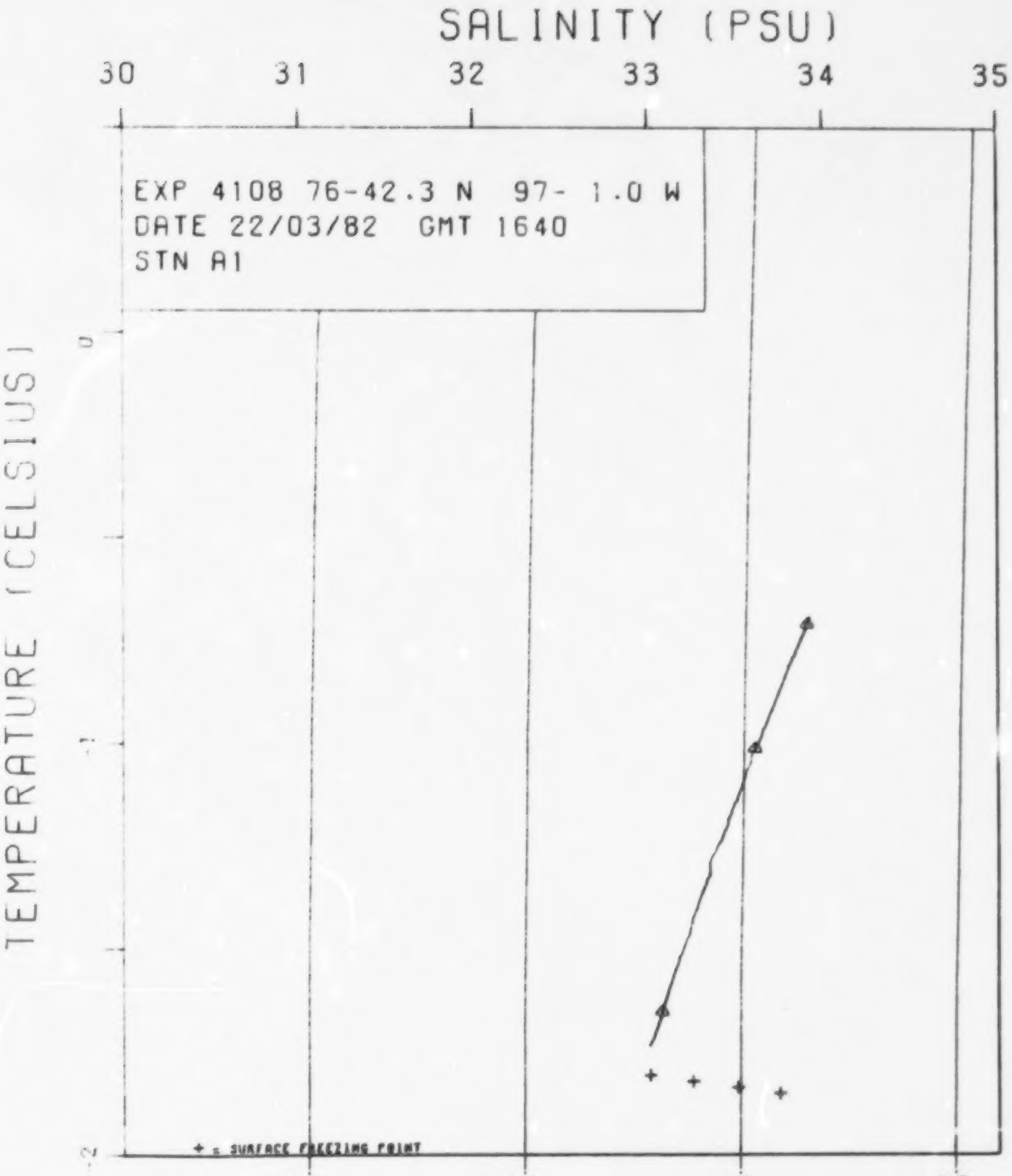
ICE THICKNESS    .9 M          WATER DEPTH   240  M

PRESSURE    TEMP     COND. R   SALINITY  SIGMAT      DHA     SOUND
 (DBARS)  (DEG.C)                       (KG/M**3)  (DYN.M)   (M/S)

     5.2   -1.735    .60887    33.005    26.557     .008    1438.5
     6.0   -1.734    .60892    33.006    26.558     .009    1438.5
     7.0   -1.732    .60898    33.008    26.560     .010    1438.6
     8.0   -1.726    .60920    33.014    26.564     .012    1438.6
     9.0   -1.723    .60937    33.019    26.568     .013    1438.6
    10.0   -1.721    .60944    33.021    26.570     .015    1438.7
    11.0   -1.721    .60947    33.022    26.571     .016    1438.7
    12.0   -1.716    .60962    33.024    26.573     .018    1438.7
    13.0   -1.714    .60982    33.031    26.578     .019    1438.8
    14.0   -1.711    .60984    33.031    26.578     .020    1438.8
    15.0   -1.710    .60987    33.031    26.578     .022    1438.8
    16.0   -1.708    .60994    33.032    26.579     .023    1438.8
    17.0   -1.705    .61006    33.035    26.581     .025    1438.9
    18.0   -1.704    .61009    33.035    26.581     .026    1438.9
    19.0   -1.698    .61028    33.040    26.585     .028    1439.0
    20.0   -1.695    .61040    33.043    26.587     .029    1439.0
    21.0   -1.693    .61050    33.046    26.590     .031    1439.0
    22.0   -1.693    .61052    33.047    26.590     .032    1439.0
    23.0   -1.693    .61052    33.046    26.589     .033    1439.1
    24.0   -1.692    .61060    33.049    26.592     .035    1439.1
    25.0   -1.683    .61085    33.054    26.596     .036    1439.1
    27.5   -1.685    .61088    33.055    26.597     .040    1439.2
    30.0   -1.685    .61089    33.054    26.596     .043    1439.2
    32.5   -1.676    .61119    33.061    26.601     .047    1439.3
    35.0   -1.676    .61122    33.061    26.602     .051    1439.4
    37.5   -1.676    .61125    33.061    26.601     .054    1439.4
    40.0   -1.673    .61135    33.063    26.603     .058    1439.4
    42.5   -1.668    .61150    33.065    26.604     .061    1439.5
    45.0   -1.668    .61155    33.066    26.605     .065    1439.6
    47.5   -1.665    .61165    33.067    26.606     .068    1439.6
    50.0   -1.652    .61208    33.076    26.613     .072    1439.7
    55.0   -1.624    .61301    33.097    26.629     .079    1440.0
    60.0   -1.568    .61482    33.139    26.662     .086    1440.4
    65.0   -1.524    .61631    33.175    26.690     .093    1440.7
    70.0   -1.364    .62163    33.308    26.794     .099    1441.7
    75.0   -1.324    .62301    33.342    26.820     .105    1442.1
    80.0   -1.238    .62586    33.410    26.873     .111    1442.6
    85.0   -1.238    .62595    33.412    26.874     .117    1442.7
    90.0   -1.186    .62768    33.453    26.906     .123    1443.1
    95.0   -1.128    .62979    33.509    26.949     .128    1443.5
   100.0   -1.012    .63378    33.609    27.026     .133    1444.3
   105.0   -1.006    .63412    33.620    27.035     .139    1444.4
   110.0    -.961    .63583    33.666    27.071     .144    1444.8
   115.0    -.913    .63758    33.711    27.106     .148    1445.2
```

SITE A1 EXPERIMENT 4108

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-.869	.63918	33.752	27.137	.153	1445.5
125.0	-.853	.63978	33.766	27.148	.157	1445.7
130.0	-.790	.64204	33.824	27.192	.162	1446.1
135.0	-.766	.64304	33.851	27.213	.166	1446.4
140.0	-.755	.64351	33.864	27.223	.170	1446.5
145.0	-.754	.64364	33.867	27.226	.174	1446.6
150.0	-.735	.64434	33.883	27.238	.179	1446.8
155.0	-.730	.64460	33.889	27.243	.183	1446.9
160.0	-.723	.64491	33.897	27.249	.187	1447.0
165.0	-.716	.64519	33.902	27.252	.191	1447.2
170.0	-.716	.64525	33.903	27.253	.195	1447.3
175.0	-.713	.64542	33.907	27.256	.199	1447.4
180.0	-.712	.64549	33.906	27.256	.203	1447.4
185.0	-.710	.64560	33.907	27.257	.207	1447.5
190.0	-.711	.64564	33.908	27.257	.211	1447.6
195.0	-.711	.64568	33.907	27.256	.215	1447.7
200.0	-.712	.64574	33.908	27.257	.219	1447.8
210.0	-.711	.64588	33.908	27.257	.227	1447.9
220.0	-.704	.64620	33.913	27.261	.235	1448.1
230.0	-.693	.64665	33.922	27.268	.242	1448.4
232.5	-.695	.64666	33.923	27.268	.244	1448.4


SALINITY (PSU)
30
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EXP 4108 76-42.3 N 97- 1.0 W
DATE 22/03/82 GMT 1640
STN A1
TEMPERATURE (CELSIUS)
0
-1
-2
+ = SURFACE FREEZING POINT
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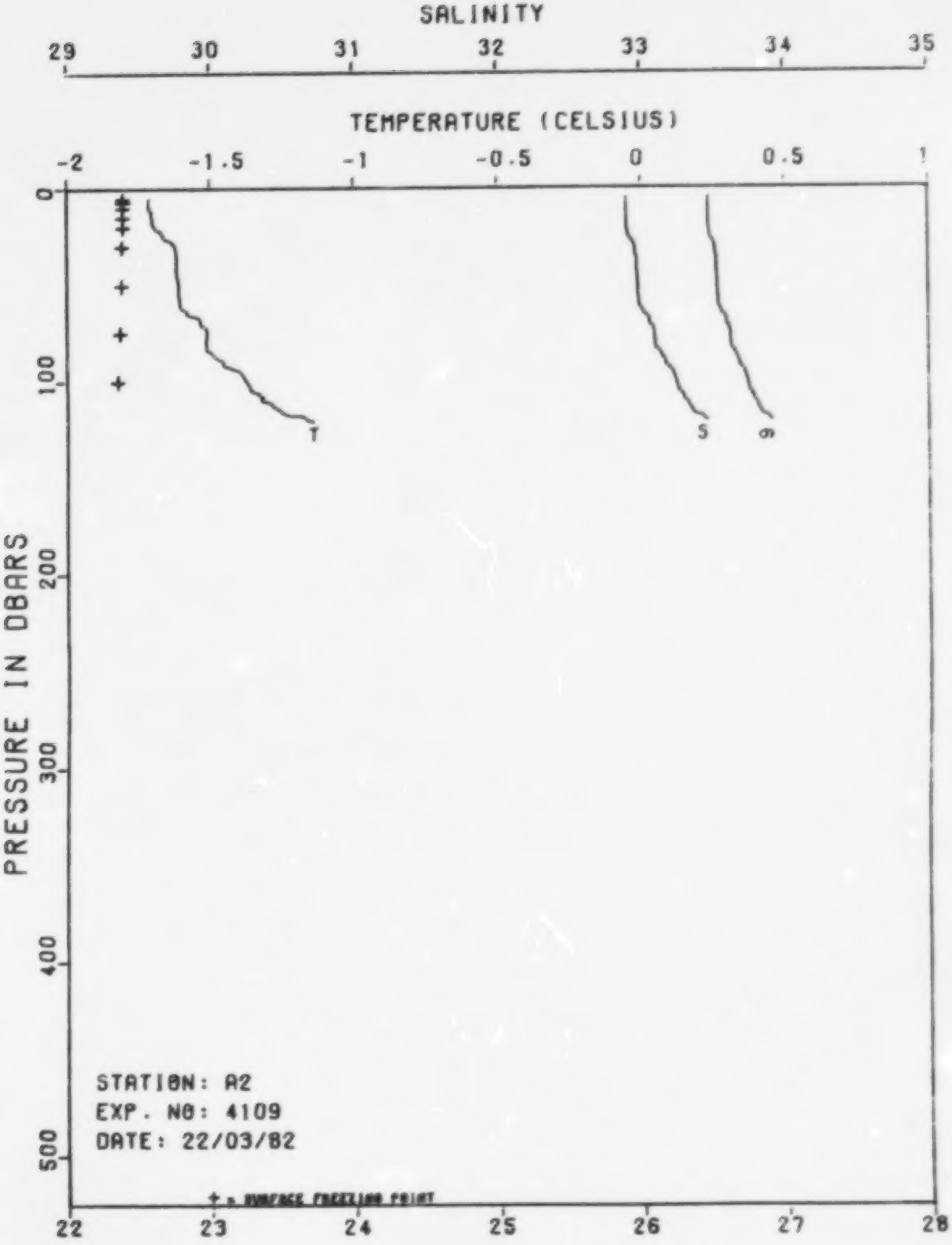
SIGMA-T


SALINITY
29
30
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33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
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PRESSURE IN DBARS
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STATION: A2
EXP. NO: 4109
DATE: 22/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE A2   EXPERIMENT 4109

LAT.N. 76-39-54   LON.W. 97-19-12   DATE 22/ 3/82   G.M.T. 1739

ICE THICKNESS -1.0 M   WATER DEPTH 122 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.1	-1.712	.60757	32.902	26.473	.008	1438.5
6.0	-1.714	.60754	32.903	26.474	.009	1438.5
7.0	-1.714	.60755	32.902	26.473	.011	1438.5
8.0	-1.712	.60757	32.901	26.473	.012	1438.5
9.0	-1.712	.60759	32.901	26.472	.014	1438.5
10.0	-1.711	.60763	32.902	26.473	.015	1438.6
11.0	-1.711	.60766	32.903	26.474	.017	1438.6
12.0	-1.704	.60779	32.902	26.473	.019	1438.6
13.0	-1.703	.60783	32.903	26.473	.020	1438.6
14.0	-1.703	.60783	32.902	26.473	.022	1438.7
15.0	-1.703	.60784	32.903	26.473	.023	1438.7
16.0	-1.699	.60791	32.902	26.473	.025	1438.7
17.0	-1.701	.60791	32.903	26.473	.026	1438.7
18.0	-1.700	.60792	32.902	26.473	.028	1438.7
19.0	-1.696	.60802	32.903	26.474	.029	1438.8
20.0	-1.693	.60812	32.905	26.475	.031	1438.8
21.0	-1.688	.60822	32.905	26.475	.032	1438.8
22.0	-1.673	.60858	32.908	26.477	.034	1438.9
23.0	-1.667	.60876	32.912	26.480	.036	1439.0
24.0	-1.665	.60885	32.915	26.482	.037	1439.0
25.0	-1.662	.60891	32.915	26.482	.039	1439.0
27.5	-1.632	.60995	32.941	26.503	.042	1439.3
30.0	-1.620	.61051	32.960	26.518	.046	1439.4
32.5	-1.617	.61066	32.964	26.521	.050	1439.5
35.0	-1.615	.61077	32.966	26.523	.054	1439.5
37.5	-1.615	.61095	32.975	26.530	.057	1439.6
40.0	-1.616	.61098	32.976	26.531	.061	1439.6
42.5	-1.615	.61100	32.976	26.531	.065	1439.6
45.0	-1.614	.61108	32.977	26.532	.069	1439.7
47.5	-1.609	.61128	32.982	26.536	.072	1439.8
50.0	-1.606	.61133	32.983	26.537	.076	1439.8
55.0	-1.608	.61143	32.965	26.538	.083	1439.9
60.0	-1.603	.61169	32.992	26.544	.091	1440.0
65.0	-1.576	.61273	33.021	26.566	.098	1440.3
70.0	-1.533	.61433	33.064	26.601	.105	1440.6
75.0	-1.510	.61536	33.098	26.627	.112	1440.8
80.0	-1.513	.61543	33.101	26.630	.119	1440.9
85.0	-1.491	.61645	33.134	26.656	.126	1441.1
90.0	-1.451	.61792	33.173	26.687	.133	1441.5
95.0	-1.394	.61987	33.222	26.725	.140	1441.9
100.0	-1.370	.62080	33.247	26.745	.146	1442.1
105.0	-1.353	.62147	33.265	26.758	.153	1442.3
110.0	-1.319	.62282	33.304	26.789	.159	1442.6
115.0	-1.257	.62496	33.357	26.830	.165	1443.1

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                                          SITE A2    EXPERIMENT 4109

PRESSURE    TEMP    COND. R  SALINITY  SIGMAT     DHA    SOUND
 (DBARS)  (DEG.C)                     (KG/M**3) (DYN.M)  (M/S)

   120.0   -1.161   .62835   33.446   26.900    .171   1443.7
   121.1   -1.137   .62918   33.467   26.915    .172   1443.9
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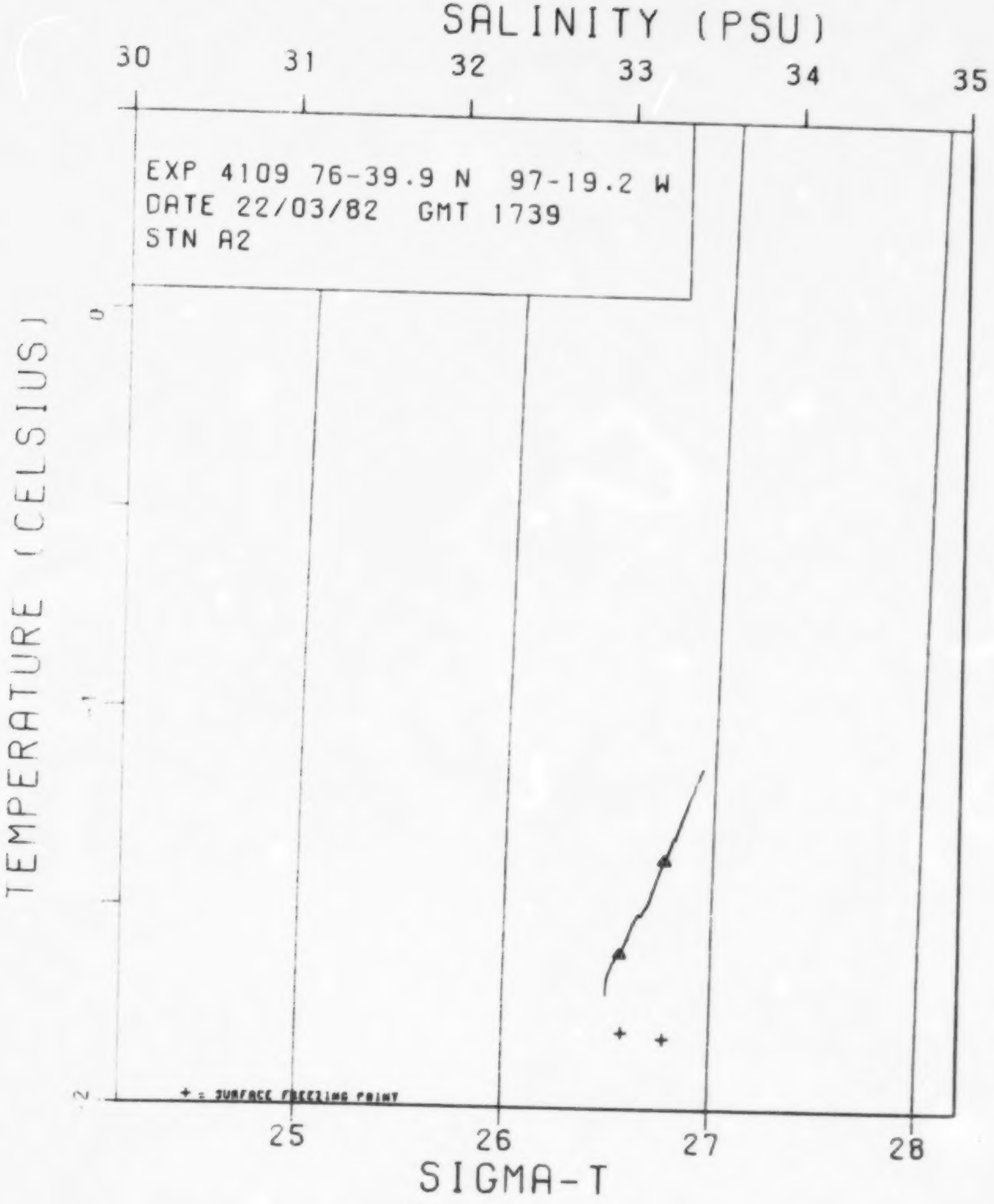
SALINITY (PSU)
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EXP 4109 76-39.9 N 97-19.2 W
DATE 22/03/82 GMT 1739
STN A2
TEMPERATURE (CELSIUS)
0
-1
-2
+ = SURFACE FREEZING POINT
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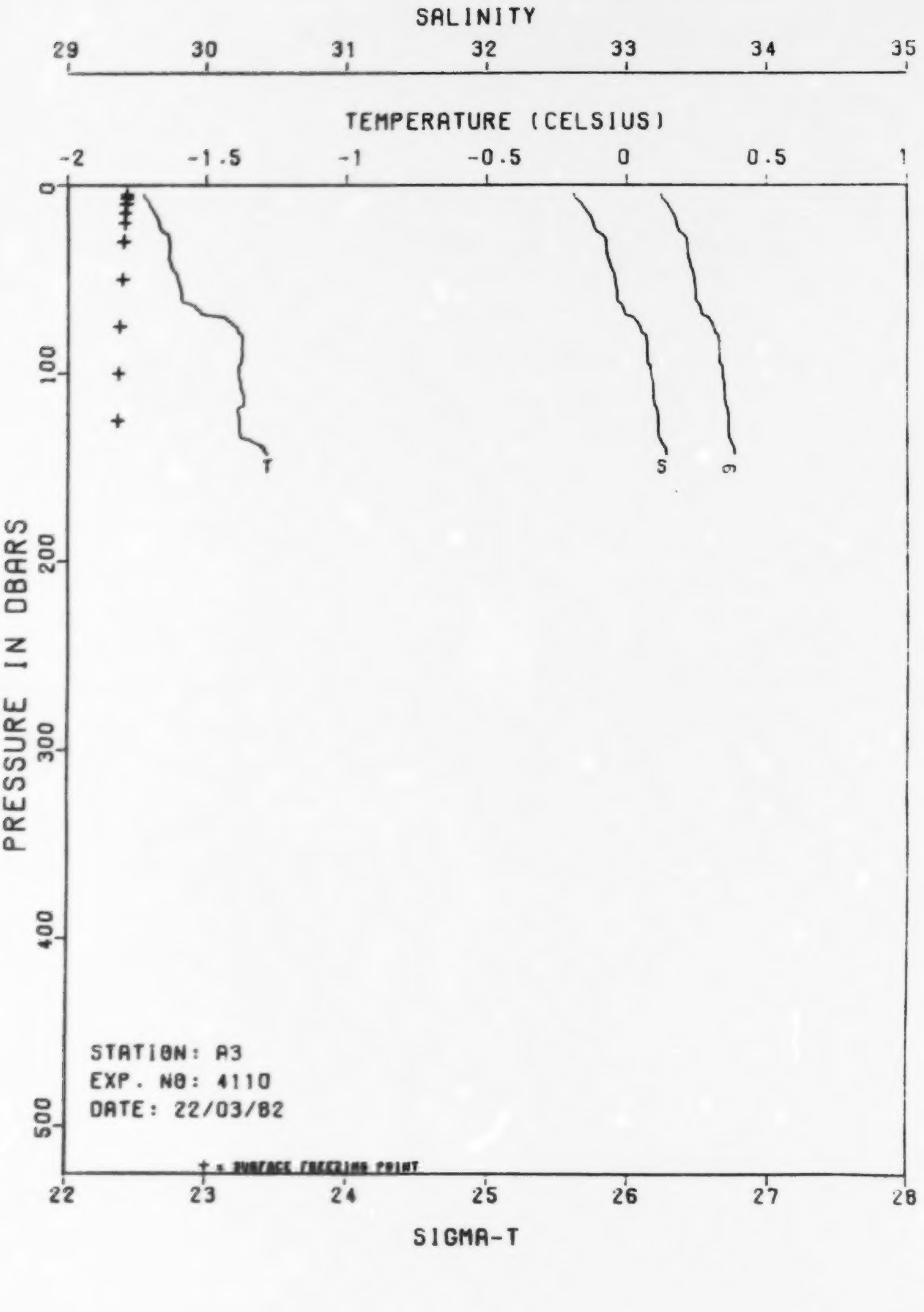
SIGMA-T


SALINITY
29
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33
34
35
TEMPERATURE (CELSIUS)
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-1.5
-1
-0.5
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0.5
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PRESSURE IN DBARS
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STATION: A3
EXP. NO: 4110
DATE: 22/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE A3   EXPERIMENT 4110

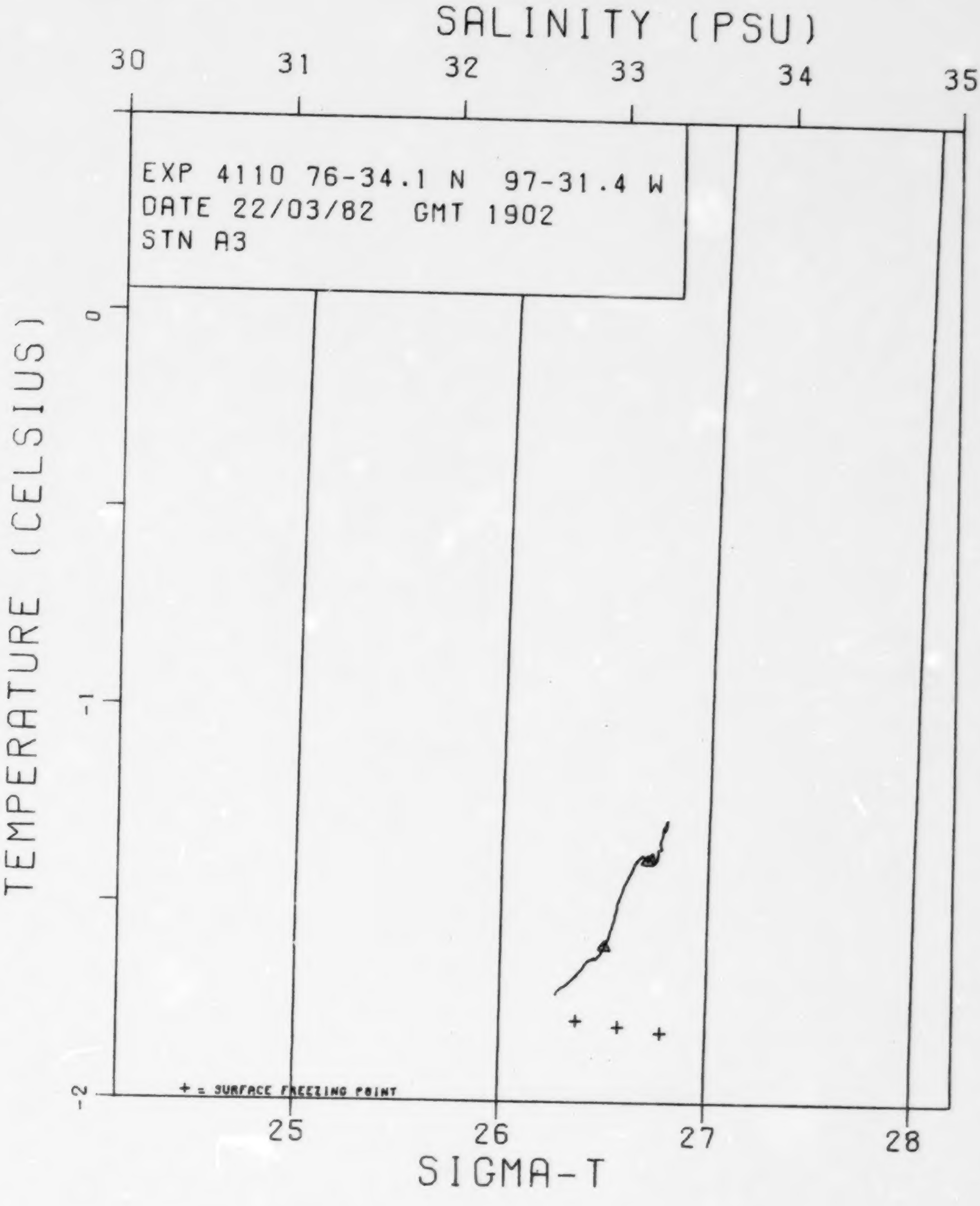
LAT.N. 76-34- 5   LON.W. 97-31-24   DATE 22/ 3/82   G.M.T. 1902

ICE THICKNESS 1.0 M   WATER DEPTH 152 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.0	-1.727	.60259	32.622	26.246	.009	1438.0
6.0	-1.723	.60272	32.625	26.249	.011	1438.0
7.0	-1.719	.60289	32.631	26.253	.012	1438.1
8.0	-1.712	.60338	32.651	26.270	.014	1438.2
9.0	-1.706	.60367	32.664	26.280	.016	1438.2
10.0	-1.705	.60403	32.680	26.293	.018	1438.3
11.0	-1.704	.60411	32.684	26.295	.019	1438.3
12.0	-1.700	.60436	32.693	26.303	.021	1438.3
13.0	-1.694	.60473	32.709	26.316	.023	1438.4
14.0	-1.691	.60487	32.712	26.319	.024	1438.4
15.0	-1.688	.60511	32.724	26.328	.026	1438.5
16.0	-1.683	.60540	32.734	26.336	.028	1438.5
17.0	-1.679	.60563	32.743	26.343	.029	1438.6
18.0	-1.675	.60580	32.749	26.348	.031	1438.6
19.0	-1.674	.60591	32.754	26.352	.033	1438.7
20.0	-1.672	.60602	32.756	26.354	.034	1438.7
21.0	-1.671	.60608	32.758	26.356	.036	1438.7
22.0	-1.671	.60611	32.760	26.357	.038	1438.7
23.0	-1.670	.60625	32.766	26.362	.039	1438.8
24.0	-1.662	.60666	32.781	26.374	.041	1438.8
25.0	-1.660	.60679	32.765	26.377	.043	1438.9
27.5	-1.638	.60801	32.833	26.415	.047	1439.1
30.0	-1.635	.60838	32.849	26.428	.051	1439.2
32.5	-1.633	.60844	32.850	26.429	.055	1439.2
35.0	-1.634	.60852	32.854	26.432	.059	1439.3
37.5	-1.638	.60856	32.858	26.436	.063	1439.3
40.0	-1.636	.60877	32.867	26.443	.067	1439.4
42.5	-1.629	.60912	32.879	26.453	.070	1439.4
45.0	-1.622	.60952	32.894	26.464	.074	1439.5
47.5	-1.609	.61002	32.908	26.475	.078	1439.7
50.0	-1.605	.61024	32.914	26.481	.082	1439.7
55.0	-1.596	.61059	32.922	26.487	.090	1439.9
60.0	-1.592	.61080	32.927	26.491	.097	1440.0
65.0	-1.540	.61253	32.970	26.524	.105	1440.4
70.0	-1.457	.61508	33.025	26.567	.112	1440.9
75.0	-1.401	.61727	33.089	26.617	.120	1441.3
80.0	-1.373	.61858	33.132	26.652	.126	1441.6
85.0	-1.374	.61880	33.143	26.660	.133	1441.7
90.0	-1.373	.61886	33.143	26.660	.140	1441.8
95.0	-1.375	.61893	33.146	26.662	.147	1441.9
100.0	-1.385	.61920	33.170	26.682	.154	1441.9
105.0	-1.378	.61965	33.186	26.695	.160	1442.1
110.0	-1.374	.61984	33.189	26.698	.167	1442.2
115.0	-1.368	.62008	33.193	26.700	.174	1442.3

SITE A3 EXPERIMENT 4110

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.389	.62013	33.217	26.720	.180	1442.3
125.0	-1.384	.62041	33.224	26.726	.187	1442.4
130.0	-1.383	.62048	33.224	26.726	.193	1442.5
135.0	-1.364	.62103	33.233	26.733	.200	1442.7
140.0	-1.294	.62322	33.280	26.769	.206	1443.2
143.4	-1.281	.62358	33.286	26.773	.210	1443.3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EXP 4110 76-34.1 N 97-31.4 W
DATE 22/03/82 GMT 1902
STN A3
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
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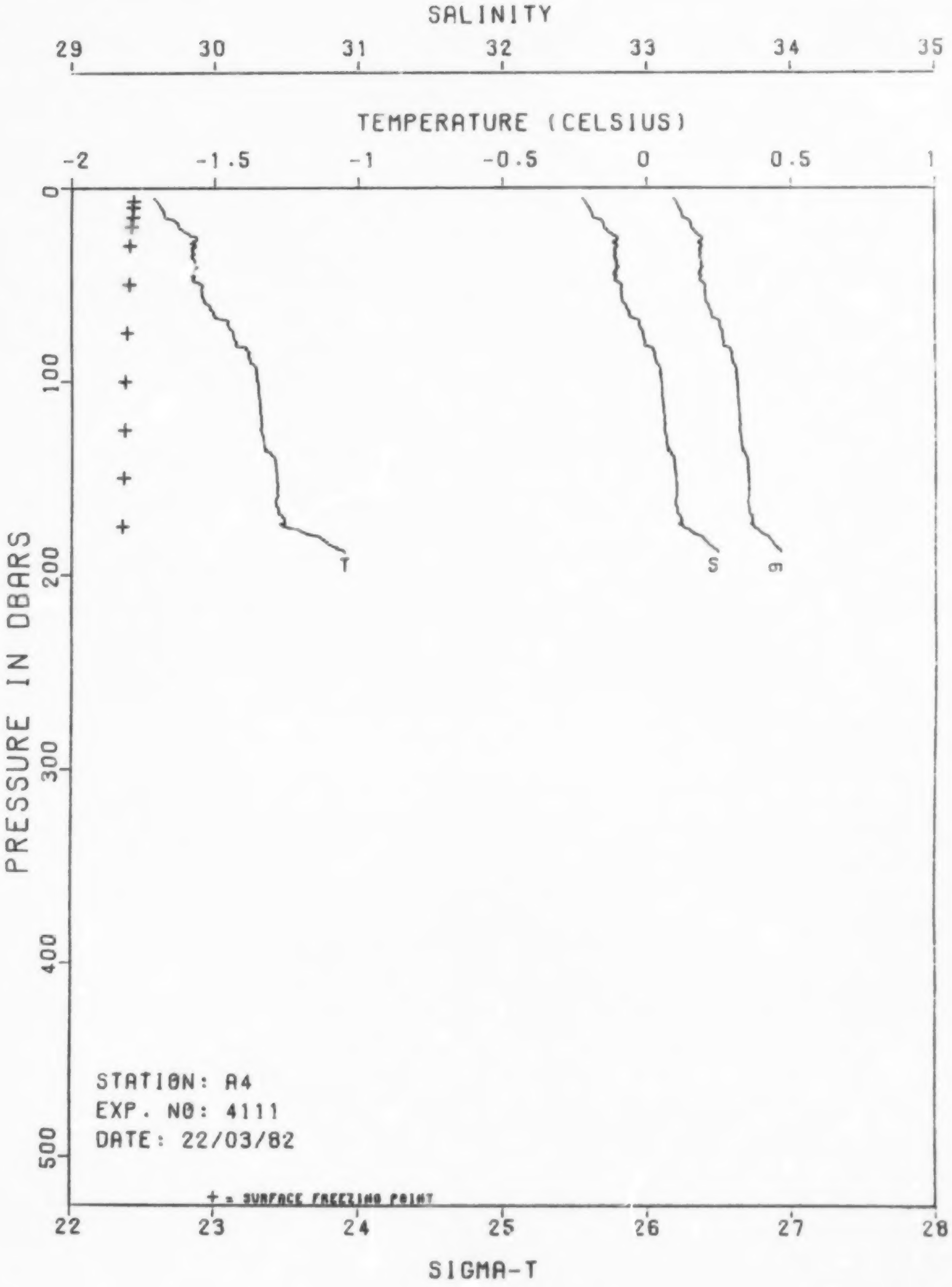
SIGMA-T


SALINITY
29
30
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35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
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PRESSURE IN DBARS
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STATION: A4
EXP. NO: 4111
DATE: 22/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE A4   EXPERIMENT 4111

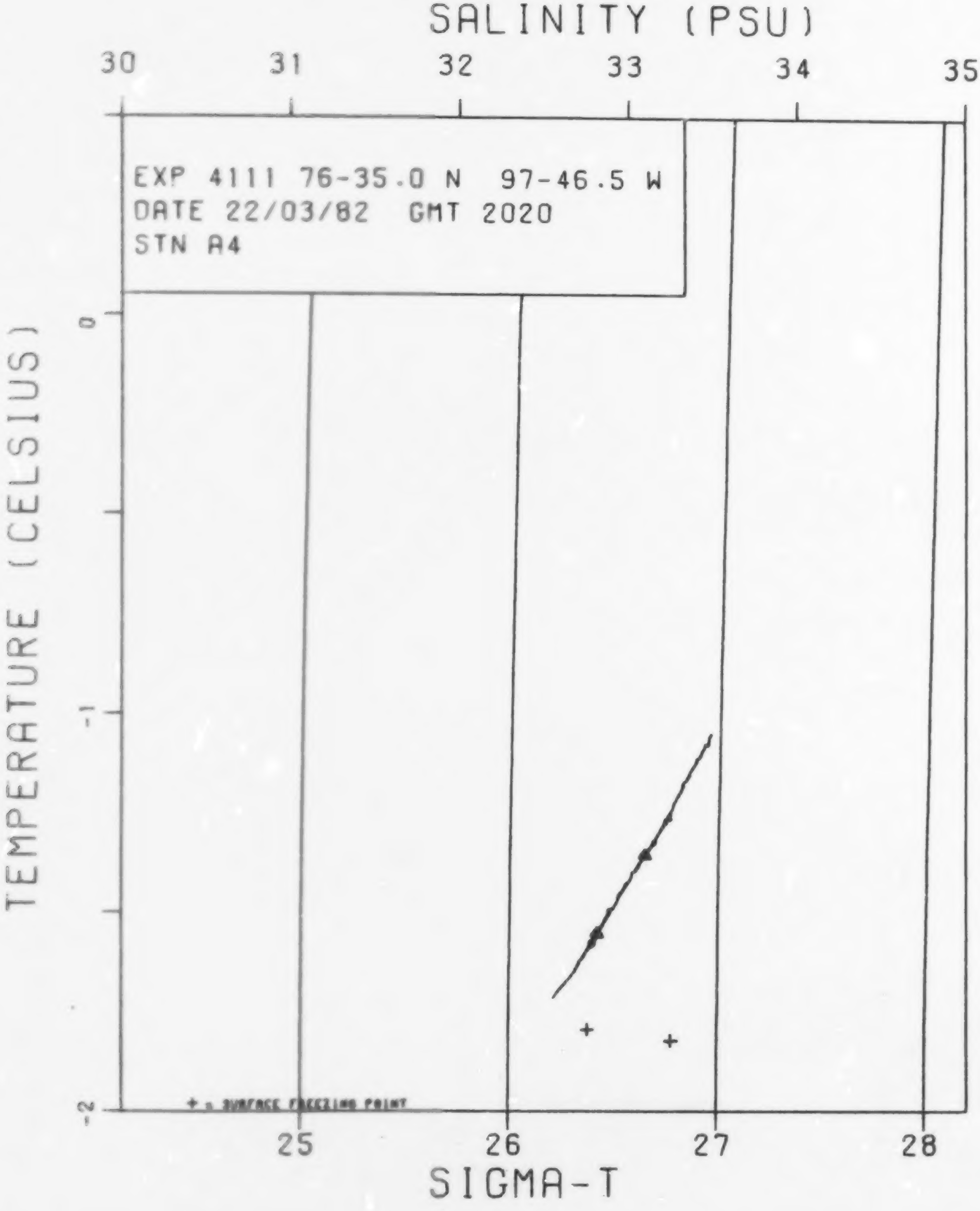
LAT.N. 76-35- 0   LON.W. 97-46-30   DATE 22/ 3/82   G.M.T. 2020

ICE THICKNESS 1.0 M   WATER DEPTH 196 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.714	.60164	32.552	26.188	.010	1438.0
6.0	-1.710	.60192	32.563	26.198	.011	1438.0
7.0	-1.701	.60225	32.573	26.205	.013	1438.1
8.0	-1.700	.60235	32.577	26.209	.015	1438.1
9.0	-1.693	.60270	32.589	26.216	.016	1438.2
10.0	-1.690	.60282	32.593	26.221	.018	1438.2
11.0	-1.683	.60322	32.608	26.234	.020	1438.3
12.0	-1.680	.60339	32.614	26.239	.022	1438.3
13.0	-1.679	.60350	32.619	26.243	.023	1438.4
14.0	-1.678	.60358	32.622	26.245	.025	1438.4
15.0	-1.676	.60370	32.626	26.248	.027	1438.4
16.0	-1.660	.60456	32.659	26.275	.029	1438.6
17.0	-1.641	.60539	32.687	26.297	.030	1438.7
18.0	-1.631	.60578	32.699	26.306	.032	1438.8
19.0	-1.628	.60591	32.703	26.309	.034	1438.8
20.0	-1.627	.60600	32.706	26.312	.036	1438.8
21.0	-1.626	.60606	32.707	26.313	.037	1438.9
22.0	-1.611	.60662	32.724	26.326	.039	1439.0
23.0	-1.605	.60695	32.736	26.336	.041	1439.0
24.0	-1.593	.60754	32.757	26.352	.042	1439.1
25.0	-1.586	.60778	32.763	26.357	.044	1439.2
27.5	-1.570	.60841	32.781	26.371	.048	1439.3
30.0	-1.570	.60863	32.793	26.381	.052	1439.4
32.5	-1.577	.60832	32.780	26.371	.056	1439.4
35.0	-1.583	.60816	32.776	26.367	.060	1439.4
37.5	-1.570	.60872	32.794	26.382	.064	1439.5
40.0	-1.572	.60872	32.794	26.382	.069	1439.6
42.5	-1.575	.60856	32.787	26.376	.073	1439.6
45.0	-1.586	.60820	32.776	26.368	.077	1439.5
47.5	-1.575	.60857	32.784	26.374	.081	1439.6
50.0	-1.545	.60985	32.825	26.407	.085	1439.9
55.0	-1.545	.60989	32.825	26.406	.093	1440.0
60.0	-1.534	.61047	32.843	26.421	.101	1440.1
65.0	-1.503	.61178	32.884	26.453	.109	1440.4
70.0	-1.458	.61369	32.944	26.501	.117	1440.8
75.0	-1.436	.61470	32.976	26.526	.124	1441.0
80.0	-1.423	.61529	32.993	26.540	.132	1441.2
85.0	-1.386	.61697	33.049	26.584	.139	1441.5
90.0	-1.379	.61734	33.059	26.592	.146	1441.7
95.0	-1.354	.61852	33.099	26.624	.153	1441.9
100.0	-1.354	.61858	33.099	26.624	.160	1442.0
105.0	-1.349	.61883	33.105	26.629	.167	1442.1
110.0	-1.344	.61910	33.112	26.634	.174	1442.2
115.0	-1.343	.61923	33.116	26.637	.181	1442.3

SITE A4   EXPERIMENT 4111

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.340	.61950	33.125	26.644	.188	1442.4
125.0	-1.340	.61950	33.122	26.642	.195	1442.5
130.0	-1.331	.61996	33.136	26.653	.202	1442.6
135.0	-1.327	.62023	33.144	26.660	.208	1442.8
140.0	-1.290	.62176	33.191	26.697	.215	1443.1
145.0	-1.286	.62194	33.194	26.699	.222	1443.2
150.0	-1.283	.62215	33.199	26.703	.228	1443.3
155.0	-1.282	.62227	33.202	26.705	.235	1443.4
160.0	-1.281	.62239	33.205	26.708	.241	1443.5
165.0	-1.288	.62213	33.194	26.699	.248	1443.5
170.0	-1.264	.62321	33.228	26.726	.255	1443.7
175.0	-1.265	.62374	33.258	26.750	.261	1443.9
180.0	-1.151	.62777	33.364	26.833	.267	1444.6
185.0	-1.091	.63013	33.433	26.886	.273	1445.1
188.6	-1.049	.63198	33.491	26.932	.277	1445.4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EXP 4111 76-35.0 N 97-46.5 W
DATE 22/03/82 GMT 2020
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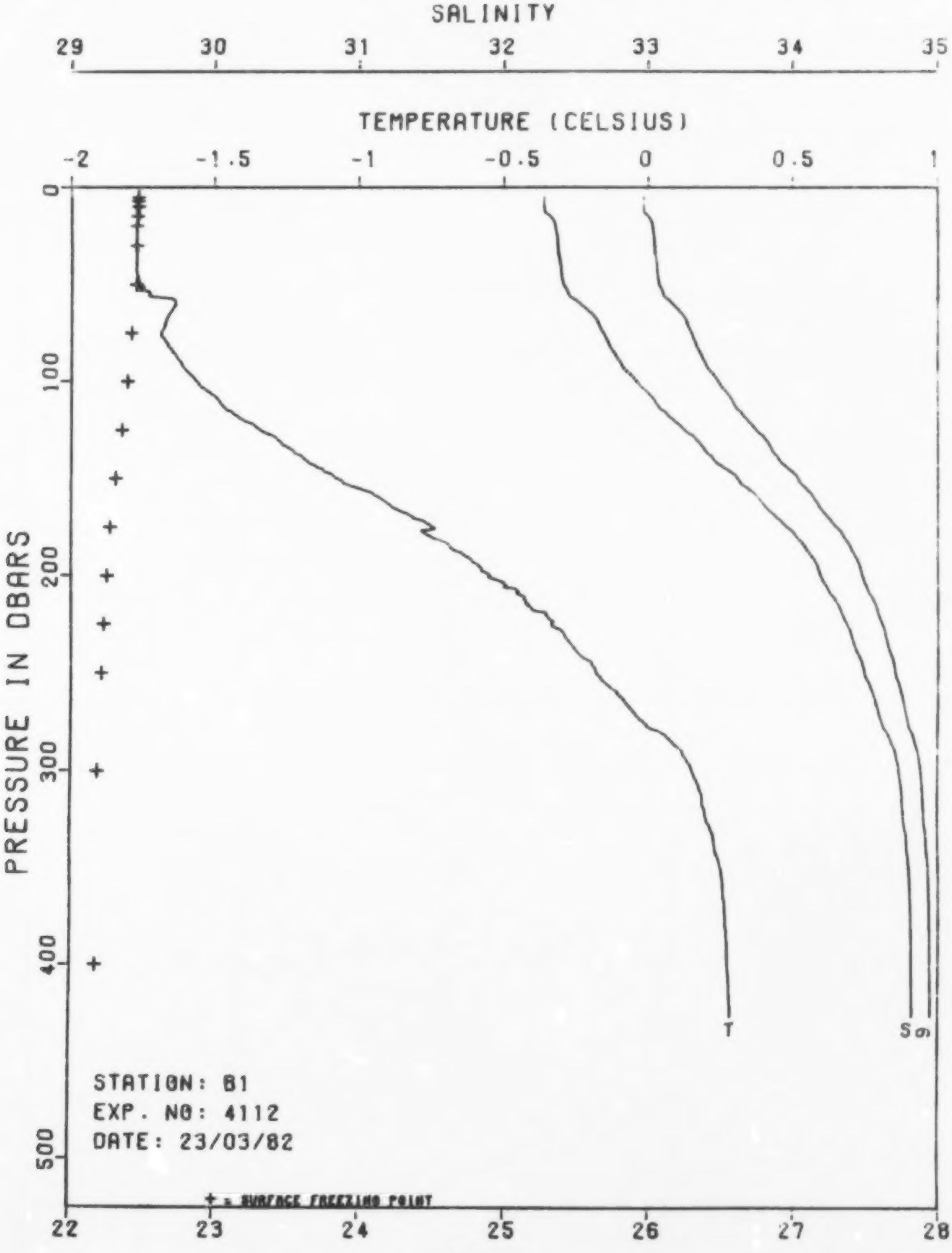
26
27
28
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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-1
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0.5
1
PRESSURE IN DBARS
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100
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300
400
500
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STATION: B1
EXP. NO: 4112
DATE: 23/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE B1 EXPERIMENT 4112

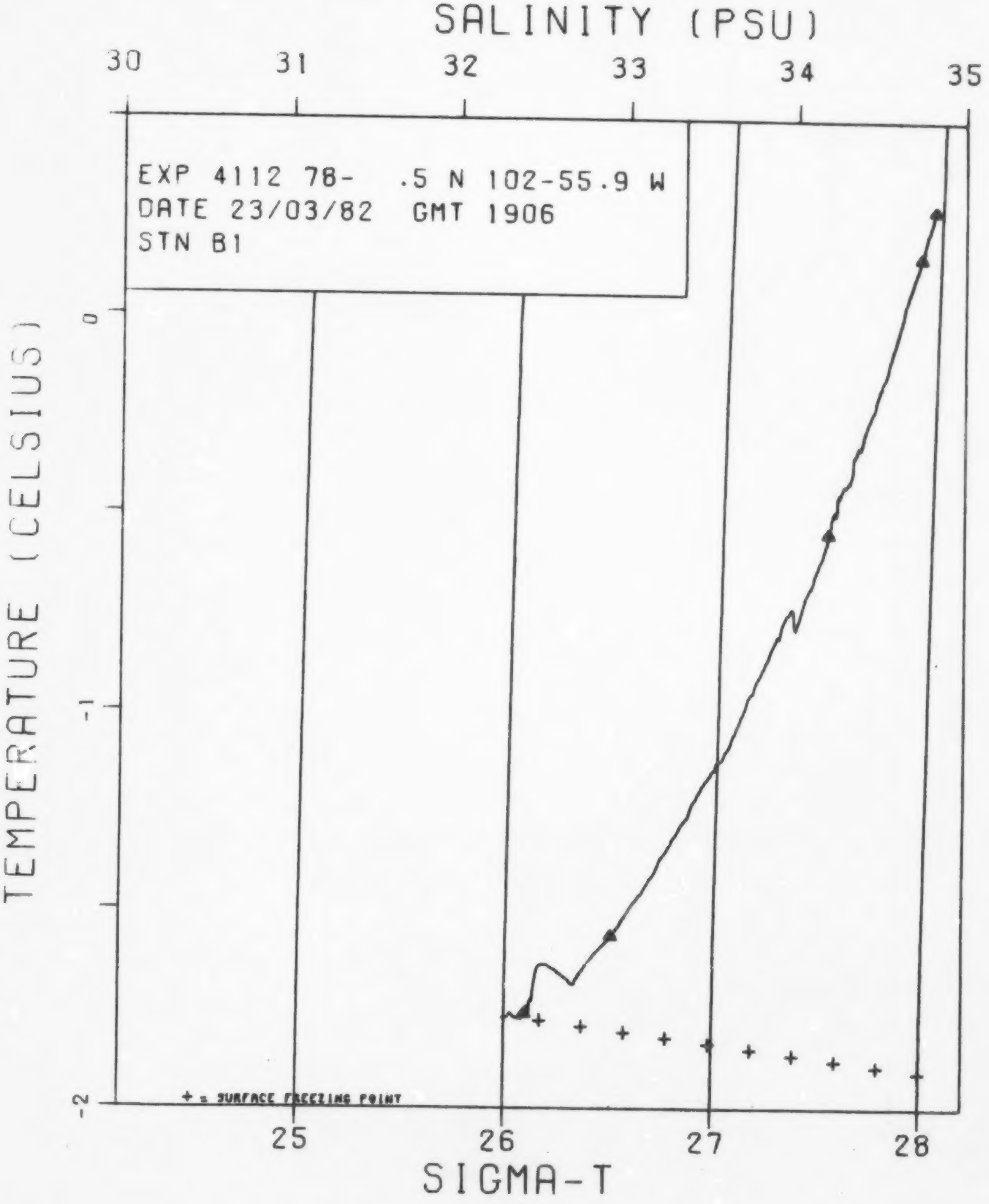
LAT.N. 78- 0-30 LON.W. 102-55-54 DATE 23/ 3/82 G.M.T. 1906

ICE THICKNESS 1.6 M WATER DEPTH 521 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.0	-1.772	.59592	32.275	25.965	.010	1437.3
6.0	-1.772	.59592	32.274	25.964	.012	1437.3
7.0	-1.772	.59593	32.274	25.964	.014	1437.3
8.0	-1.773	.59595	32.276	25.965	.016	1437.3
9.0	-1.772	.59596	32.275	25.965	.018	1437.4
10.0	-1.772	.59598	32.276	25.966	.020	1437.4
11.0	-1.772	.59602	32.278	25.967	.022	1437.4
12.0	-1.773	.59602	32.278	25.967	.024	1437.4
13.0	-1.773	.59612	32.263	25.972	.026	1437.4
14.0	-1.773	.59645	32.302	25.987	.028	1437.5
15.0	-1.760	.59696	32.318	25.999	.030	1437.6
16.0	-1.763	.59713	32.330	26.009	.032	1437.6
17.0	-1.771	.59721	32.343	26.020	.034	1437.6
18.0	-1.773	.59724	32.346	26.023	.036	1437.6
19.0	-1.774	.59732	32.351	26.027	.038	1437.6
20.0	-1.774	.59736	32.353	26.028	.040	1437.6
21.0	-1.774	.59742	32.356	26.031	.042	1437.7
22.0	-1.772	.59747	32.357	26.032	.044	1437.7
23.0	-1.773	.59749	32.358	26.032	.046	1437.7
24.0	-1.773	.59758	32.363	26.036	.048	1437.7
25.0	-1.773	.59760	32.364	26.037	.050	1437.7
27.5	-1.774	.59763	32.366	26.038	.055	1437.8
30.0	-1.775	.59769	32.368	26.040	.060	1437.8
32.5	-1.776	.59773	32.370	26.042	.065	1437.9
35.0	-1.771	.59790	32.373	26.045	.070	1437.9
37.5	-1.775	.59800	32.382	26.052	.075	1438.0
40.0	-1.774	.59812	32.387	26.056	.079	1438.0
42.5	-1.776	.59816	32.390	26.058	.084	1438.1
45.0	-1.771	.59836	32.394	26.062	.089	1438.1
47.5	-1.769	.59849	32.398	26.065	.094	1438.2
50.0	-1.763	.59876	32.406	26.071	.099	1438.3
55.0	-1.724	.60016	32.443	26.101	.108	1438.6
60.0	-1.639	.60317	32.527	26.167	.118	1439.2
65.0	-1.659	.60413	32.602	26.228	.127	1439.3
70.0	-1.673	.60470	32.648	26.266	.135	1439.4
75.0	-1.688	.60509	32.685	26.296	.144	1439.4
80.0	-1.670	.60606	32.720	26.324	.152	1439.6
85.0	-1.646	.60720	32.758	26.354	.161	1439.9
90.0	-1.619	.60856	32.806	26.393	.169	1440.2
95.0	-1.597	.60979	32.852	26.430	.177	1440.4
100.0	-1.564	.61162	32.920	26.484	.185	1440.7
105.0	-1.524	.61352	32.986	26.536	.192	1441.1
110.0	-1.486	.61525	33.043	26.582	.200	1441.5
115.0	-1.455	.61689	33.102	26.629	.207	1441.8

SITE 61 EXPERIMENT #112

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.402	.61920	33.177	26.686	.214	1442.2
125.0	-1.340	.62168	33.251	26.747	.220	1442.7
130.0	-1.283	.62421	33.333	26.811	.226	1443.1
135.0	-1.234	.62616	33.389	26.856	.232	1443.5
140.0	-1.189	.62805	33.448	26.902	.236	1443.9
145.0	-1.127	.63082	33.537	26.972	.244	1444.4
150.0	-1.077	.63321	33.618	27.036	.249	1444.8
155.0	-1.004	.63587	33.690	27.091	.254	1445.4
160.0	-.929	.63858	33.760	27.145	.258	1445.9
165.0	-.885	.64041	33.814	27.187	.263	1446.3
170.0	-.812	.64311	33.886	27.243	.267	1446.8
175.0	-.745	.64580	33.964	27.304	.271	1447.3
180.0	-.754	.64673	34.025	27.353	.274	1447.6
185.0	-.685	.64910	34.082	27.397	.278	1447.9
190.0	-.630	.65105	34.129	27.433	.281	1448.3
195.0	-.585	.65268	34.170	27.464	.284	1448.6
200.0	-.546	.65381	34.188	27.477	.287	1448.9
210.0	-.440	.65736	34.268	27.537	.293	1449.7
220.0	-.351	.66048	34.341	27.591	.298	1450.4
230.0	-.290	.66286	34.402	27.638	.302	1450.9
240.0	-.239	.66475	34.446	27.671	.307	1451.4
250.0	-.180	.66685	34.493	27.706	.311	1451.9
260.0	-.107	.66938	34.549	27.748	.314	1452.4
270.0	-.048	.67138	34.591	27.779	.317	1452.9
280.0	.043	.67432	34.649	27.821	.320	1453.6
290.0	.119	.67695	34.707	27.863	.323	1454.2
300.0	.153	.67820	34.733	27.882	.325	1454.5
310.0	.180	.67914	34.750	27.895	.327	1454.9
320.0	.197	.67977	34.760	27.902	.329	1455.1
330.0	.219	.68061	34.777	27.914	.331	1455.4
340.0	.231	.68114	34.787	27.921	.333	1455.6
350.0	.251	.68185	34.798	27.930	.334	1455.9
360.0	.258	.68217	34.803	27.933	.336	1456.1
370.0	.263	.68246	34.807	27.936	.336	1456.3
380.0	.266	.68265	34.809	27.937	.339	1456.5
390.0	.272	.68294	34.813	27.940	.341	1456.7
400.0	.273	.68311	34.815	27.941	.342	1456.8
425.0	.284	.68369	34.821	27.946	.346	1457.3
427.0	.284	.68370	34.820	27.945	.347	1457.3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35
EXP 4112 78- .5 N 102-55.9 W
DATE 23/03/82 GMT 1906
STN B1
TEMPERATURE (CELSIUS)
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-2
+ = SURFACE FREEZING POINT
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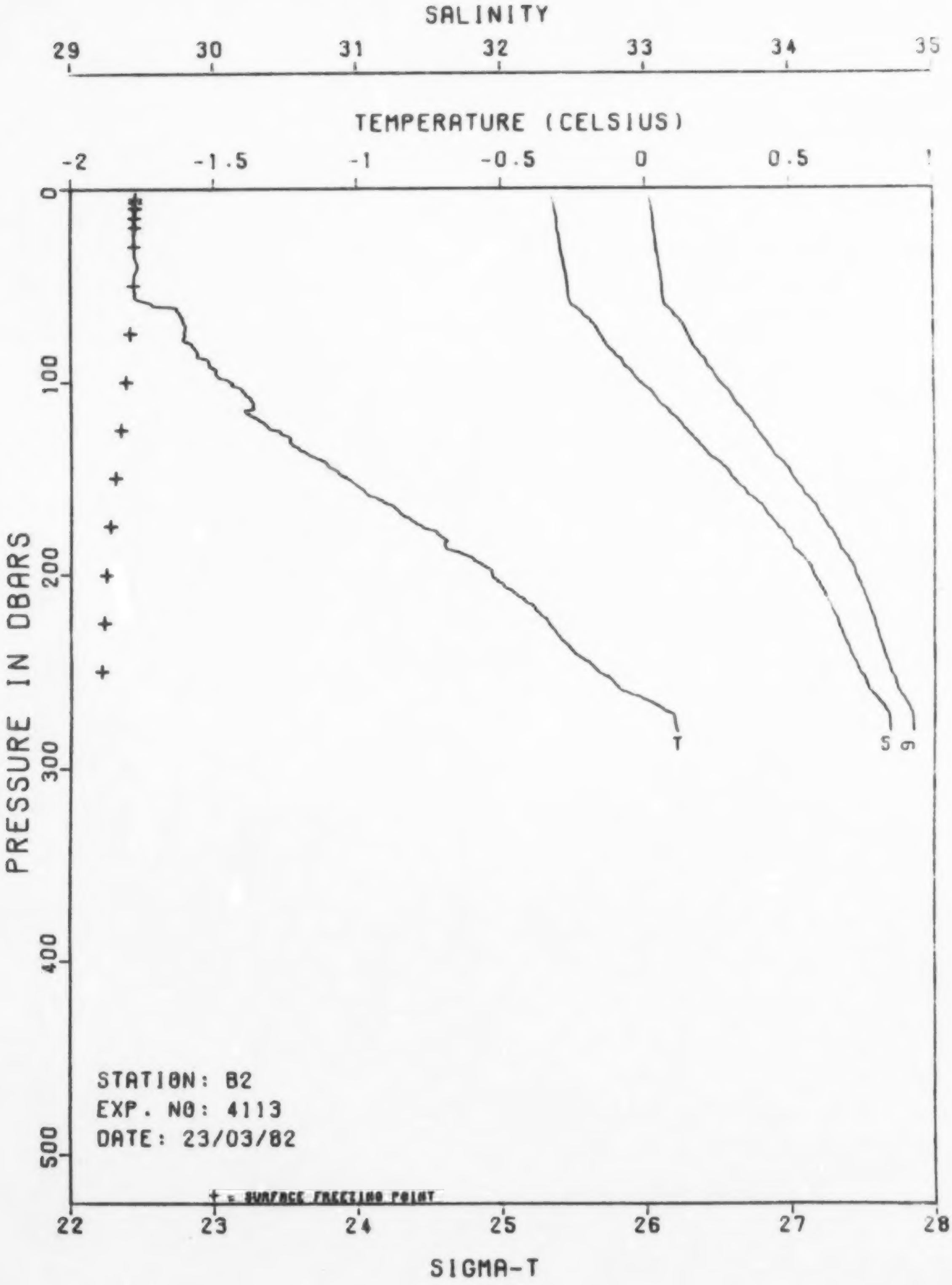
SIGMA-T


SALINITY
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31
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33
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35
TEMPERATURE (CELSIUS)
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-1
-0.5
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PRESSURE IN DBARS
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STATION: B2
EXP. NO: 4113
DATE: 23/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE 82 EXPERIMENT 4113

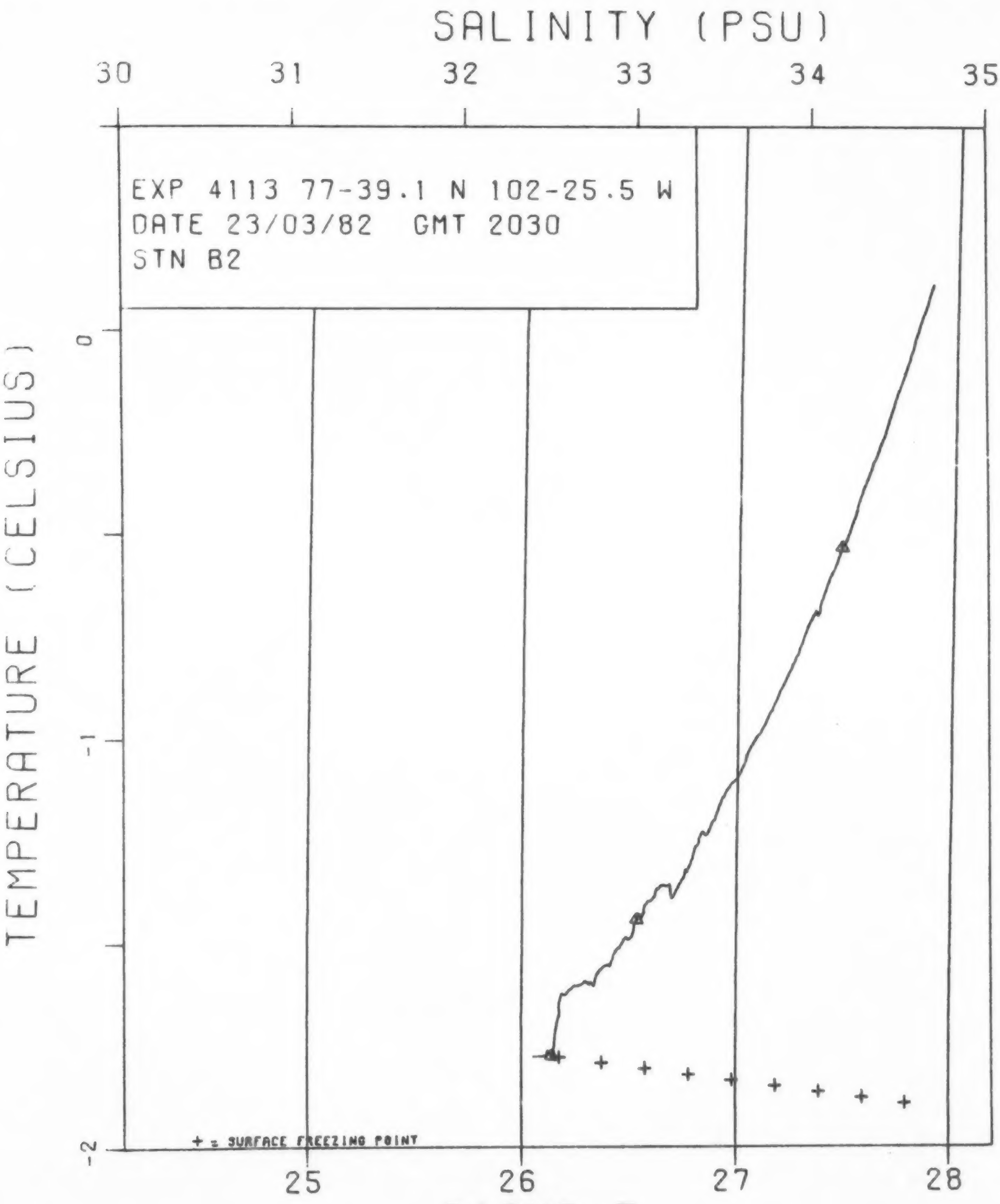
LAT.N. 77-39- 5 LON.W. 102-25-30 DATE 23/ 3/82 G.M.T. 2030

ICE THICKNESS 1.9 M WATER DEPTH 285 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.776	.59718	32.357	26.031	.010	1437.4
6.0	-1.779	.59718	32.357	26.032	.012	1437.4
7.0	-1.780	.59729	32.363	26.037	.014	1437.4
8.0	-1.778	.59740	32.368	26.041	.016	1437.4
9.0	-1.779	.59745	32.371	26.043	.018	1437.5
10.0	-1.779	.59753	32.376	26.047	.020	1437.5
11.0	-1.779	.59754	32.375	26.046	.022	1437.5
12.0	-1.779	.59757	32.376	26.047	.024	1437.5
13.0	-1.778	.59765	32.380	26.050	.025	1437.5
14.0	-1.778	.59773	32.384	26.053	.027	1437.6
15.0	-1.778	.59776	32.385	26.054	.029	1437.6
16.0	-1.779	.59782	32.389	26.057	.031	1437.6
17.0	-1.779	.59783	32.389	26.057	.033	1437.6
18.0	-1.778	.59787	32.390	26.058	.035	1437.6
19.0	-1.778	.59788	32.390	26.059	.037	1437.7
20.0	-1.779	.59791	32.392	26.060	.039	1437.7
21.0	-1.779	.59793	32.392	26.060	.041	1437.7
22.0	-1.778	.59796	32.393	26.061	.043	1437.7
23.0	-1.779	.59802	32.396	26.064	.045	1437.7
24.0	-1.779	.59813	32.402	26.069	.047	1437.8
25.0	-1.778	.59823	32.406	26.072	.049	1437.8
27.5	-1.776	.59830	32.409	26.074	.054	1437.8
30.0	-1.776	.59844	32.416	26.080	.058	1437.9
32.5	-1.776	.59852	32.417	26.080	.063	1437.9
35.0	-1.775	.59868	32.424	26.086	.068	1438.0
37.5	-1.769	.59903	32.437	26.097	.073	1438.1
40.0	-1.763	.59924	32.442	26.100	.077	1438.1
42.5	-1.767	.59925	32.445	26.103	.082	1438.2
45.0	-1.777	.59928	32.457	26.112	.087	1438.2
47.5	-1.778	.59935	32.460	26.115	.092	1438.2
50.0	-1.777	.59943	32.461	26.116	.096	1438.3
55.0	-1.776	.59962	32.469	26.123	.106	1438.4
60.0	-1.711	.60116	32.486	26.135	.115	1438.8
65.0	-1.614	.60437	32.567	26.199	.124	1439.4
70.0	-1.602	.60582	32.637	26.255	.133	1439.7
75.0	-1.605	.60659	32.683	26.293	.142	1439.8
80.0	-1.580	.60780	32.724	26.325	.150	1440.1
85.0	-1.555	.60931	32.783	26.372	.159	1440.3
90.0	-1.517	.61113	32.846	26.423	.167	1440.7
95.0	-1.493	.61269	32.908	26.473	.174	1441.0
100.0	-1.443	.61450	32.957	26.511	.182	1441.4
105.0	-1.397	.61687	33.042	26.579	.189	1441.8
110.0	-1.364	.61829	33.087	26.615	.197	1442.1
115.0	-1.394	.61905	33.161	26.675	.203	1442.1

SITE 62 EXPERIMENT 4113

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.340	.62126	33.228	26.728	.210	1442.6
125.0	-1.292	.62314	33.283	26.771	.216	1443.0
130.0	-1.229	.62544	33.344	26.819	.223	1443.4
135.0	-1.199	.62711	33.406	26.868	.229	1443.7
140.0	-1.139	.62933	33.467	26.915	.234	1444.2
145.0	-1.089	.63179	33.552	26.983	.240	1444.6
150.0	-1.045	.63348	33.598	27.019	.245	1445.0
155.0	-.993	.63564	33.663	27.069	.250	1445.4
160.0	-.947	.63762	33.724	27.117	.255	1445.8
165.0	-.873	.64059	33.811	27.185	.259	1446.3
170.0	-.837	.64198	33.848	27.214	.263	1446.6
175.0	-.776	.64431	33.912	27.263	.267	1447.1
180.0	-.716	.64653	33.970	27.308	.271	1447.5
185.0	-.700	.64768	34.016	27.344	.275	1447.7
190.0	-.629	.65003	34.069	27.384	.278	1448.2
195.0	-.572	.65221	34.129	27.430	.282	1448.6
200.0	-.533	.65356	34.160	27.453	.285	1449.0
210.0	-.460	.65644	34.237	27.513	.291	1449.6
220.0	-.373	.65938	34.302	27.561	.296	1450.2
230.0	-.314	.66168	34.361	27.606	.301	1450.7
240.0	-.251	.66401	34.418	27.649	.305	1451.3
250.0	-.169	.66679	34.478	27.693	.310	1451.9
260.0	-.088	.66971	34.547	27.745	.313	1452.5
270.0	.062	.67485	34.664	27.832	.316	1453.5
280.0	.106	.67643	34.697	27.856	.319	1454.0
281.7	.113	.67664	34.701	27.859	.319	1454.0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DATE 23/03/82 GMT 2030
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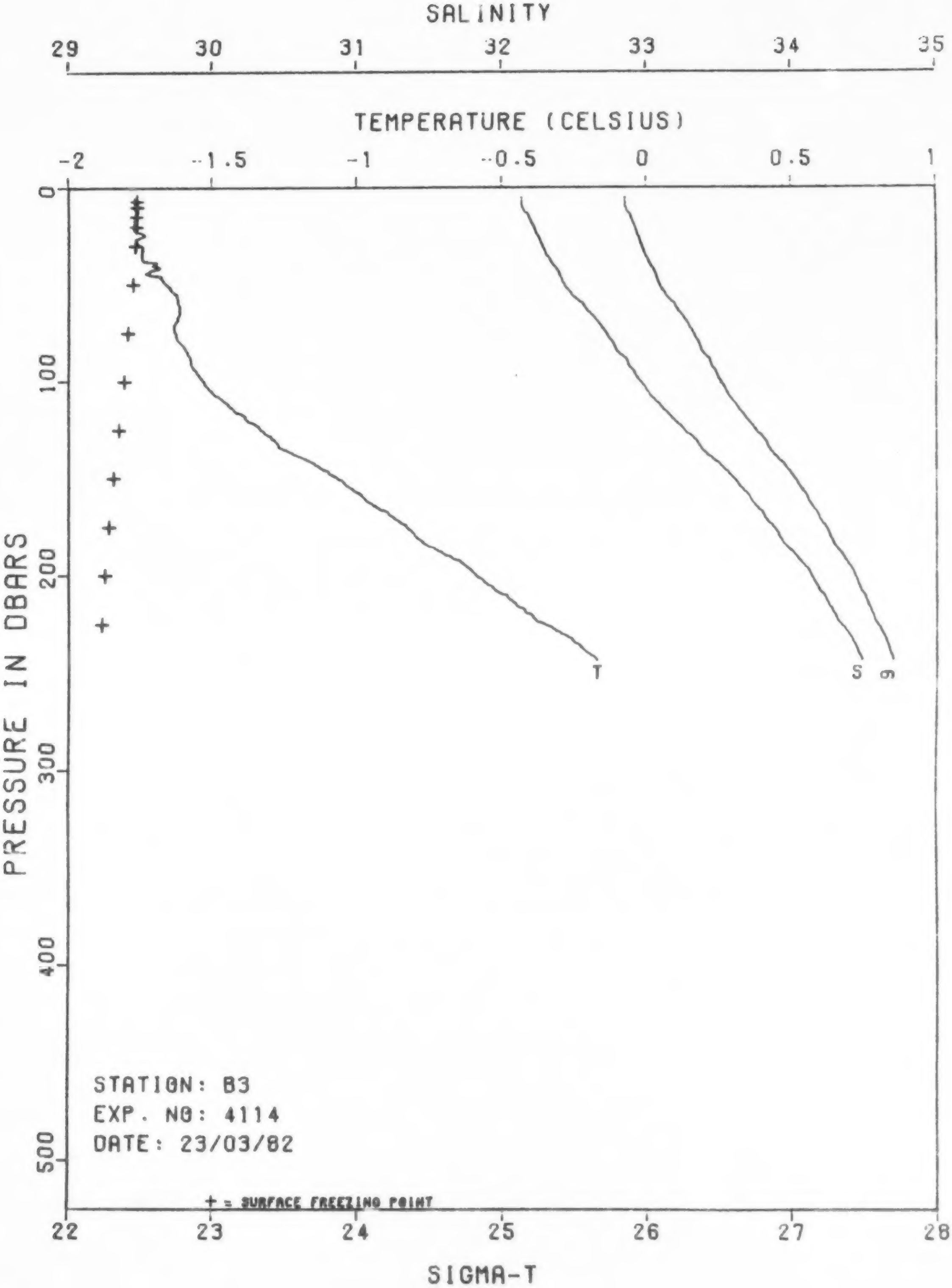
SIGMA-T


SALINITY
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30
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32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
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PRESSURE IN DBARS
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STATION: B3
EXP. NO: 4114
DATE: 23/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE B3   EXPERIMENT 4114

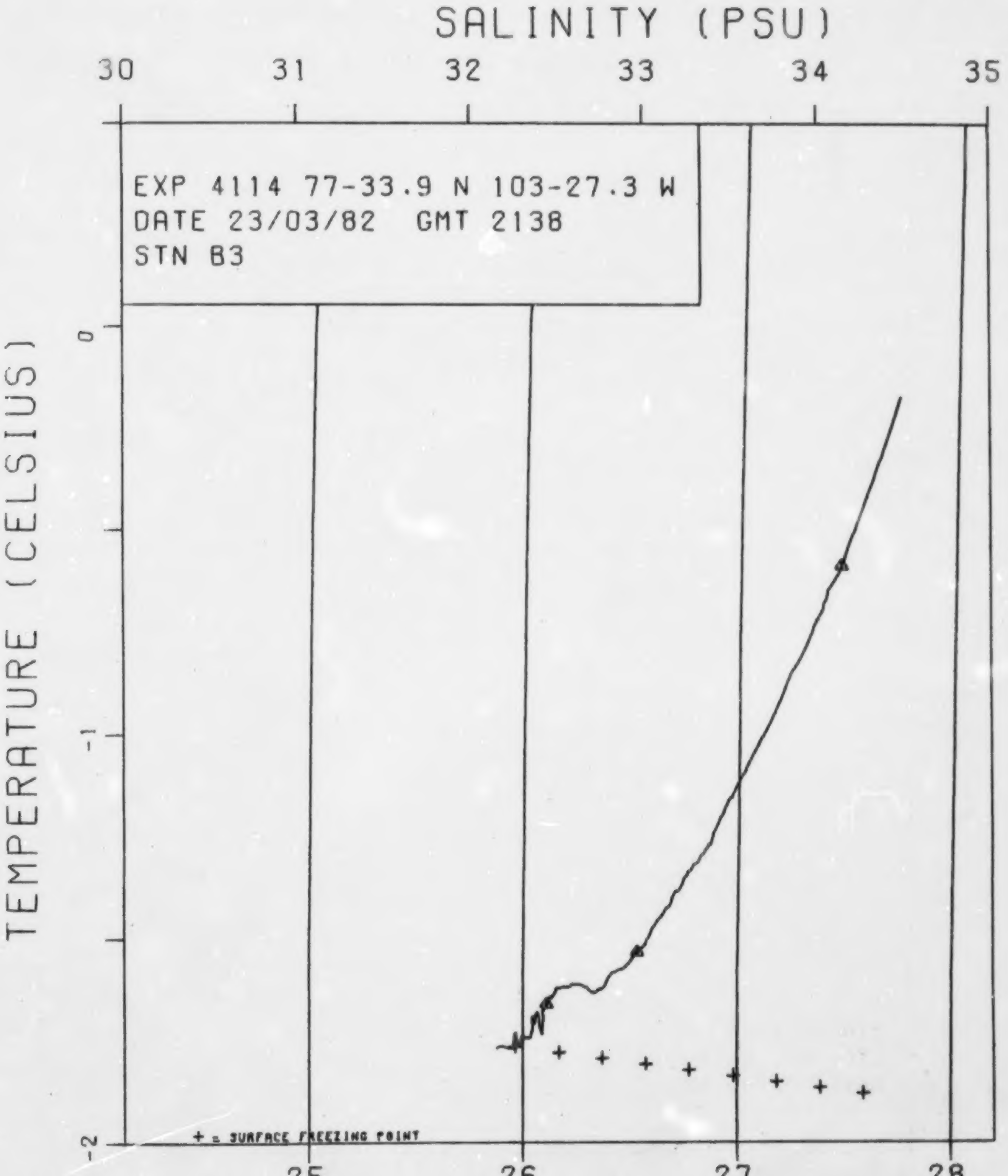
LAT.N. 77-33-54   LON.W. 103-27-17   DATE 23/ 3/82   G.M.T. 2138

ICE THICKNESS   2.3 M   WATER DEPTH   247   M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMA T (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.3	-1.768	.59372	32.139	25.854	.011	1437.1
6.0	-1.768	.59372	32.139	25.854	.013	1437.1
7.0	-1.766	.59372	32.139	25.854	.015	1437.2
8.0	-1.767	.59374	32.138	25.854	.017	1437.2
9.0	-1.767	.59375	32.138	25.853	.019	1437.2
10.0	-1.766	.59380	32.139	25.854	.021	1437.2
11.0	-1.765	.59396	32.148	25.861	.023	1437.2
12.0	-1.765	.59408	32.154	25.866	.026	1437.3
13.0	-1.764	.59431	32.166	25.876	.028	1437.3
14.0	-1.767	.59458	32.184	25.891	.030	1437.3
15.0	-1.766	.59463	32.186	25.892	.032	1437.4
16.0	-1.767	.59470	32.190	25.896	.034	1437.4
17.0	-1.769	.59481	32.198	25.902	.036	1437.4
18.0	-1.769	.59489	32.202	25.906	.038	1437.4
19.0	-1.770	.59500	32.209	25.911	.040	1437.4
20.0	-1.770	.59516	32.219	25.919	.042	1437.5
21.0	-1.771	.59526	32.225	25.924	.044	1437.5
22.0	-1.772	.59533	32.229	25.928	.046	1437.5
23.0	-1.747	.59588	32.235	25.932	.049	1437.7
24.0	-1.736	.59618	32.240	25.936	.051	1437.7
25.0	-1.734	.59638	32.249	25.943	.053	1437.8
27.5	-1.765	.59608	32.263	25.955	.058	1437.7
30.0	-1.749	.59665	32.279	25.967	.063	1437.8
32.5	-1.740	.59708	32.293	25.979	.068	1437.9
35.0	-1.747	.59725	32.308	25.991	.073	1438.0
37.5	-1.743	.59775	32.333	26.011	.078	1438.0
40.0	-1.702	.59884	32.351	26.025	.083	1438.3
42.5	-1.707	.59930	32.383	26.051	.088	1438.4
45.0	-1.720	.59937	32.399	26.064	.093	1438.4
47.5	-1.673	.60051	32.414	26.075	.097	1438.7
50.0	-1.659	.60106	32.429	26.087	.102	1438.8
55.0	-1.627	.60257	32.481	26.129	.112	1439.1
60.0	-1.619	.60407	32.558	26.192	.121	1439.3
65.0	-1.612	.60515	32.611	26.234	.130	1439.5
70.0	-1.628	.60593	32.672	26.285	.139	1439.6
75.0	-1.626	.60680	32.720	26.324	.147	1439.8
80.0	-1.611	.60797	32.768	26.362	.155	1440.0
85.0	-1.587	.60902	32.800	26.388	.164	1440.2
90.0	-1.573	.61047	32.868	26.442	.172	1440.5
95.0	-1.554	.61166	32.914	26.479	.179	1440.7
100.0	-1.533	.61282	32.957	26.513	.187	1440.9
105.0	-1.501	.61428	33.005	26.552	.194	1441.2
110.0	-1.461	.61601	33.059	26.595	.202	1441.6
115.0	-1.422	.61788	33.124	26.646	.209	1442.0

SITE B3 EXPERIMENT 4114

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.382	.61984	33.191	26.700	.215	1442.3
125.0	-1.332	.62203	33.262	26.756	.222	1442.7
130.0	-1.290	.62420	33.340	26.818	.228	1443.1
135.0	-1.253	.62568	33.383	26.851	.234	1443.4
140.0	-1.179	.62845	33.460	26.911	.240	1444.0
145.0	-1.123	.63083	33.533	26.969	.245	1444.4
150.0	-1.066	.63312	33.601	27.022	.250	1444.9
155.0	-1.022	.63500	33.658	27.067	.255	1445.2
160.0	-.975	.63693	33.715	27.111	.260	1445.6
165.0	-.930	.63869	33.764	27.149	.265	1446.0
170.0	-.875	.64077	33.820	27.193	.269	1446.4
175.0	-.829	.64270	33.879	27.238	.273	1446.8
180.0	-.797	.64405	33.918	27.268	.277	1447.1
185.0	-.751	.64586	33.968	27.307	.281	1447.4
190.0	-.681	.64839	34.033	27.357	.285	1447.9
195.0	-.624	.65064	34.096	27.405	.286	1448.4
200.0	-.588	.65210	34.137	27.437	.291	1448.7
210.0	-.487	.65573	34.226	27.505	.297	1449.4
220.0	-.401	.65878	34.299	27.560	.303	1450.1
230.0	-.295	.66257	34.390	27.629	.306	1450.9
240.0	-.203	.66569	34.459	27.680	.312	1451.5
243.9	-.172	.66678	34.484	27.699	.313	1451.8


SALINITY (PSU)
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35
EXP 4114 77-33.9 N 103-27.3 W
DATE 23/03/82 GMT 2138
STN B3
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-1
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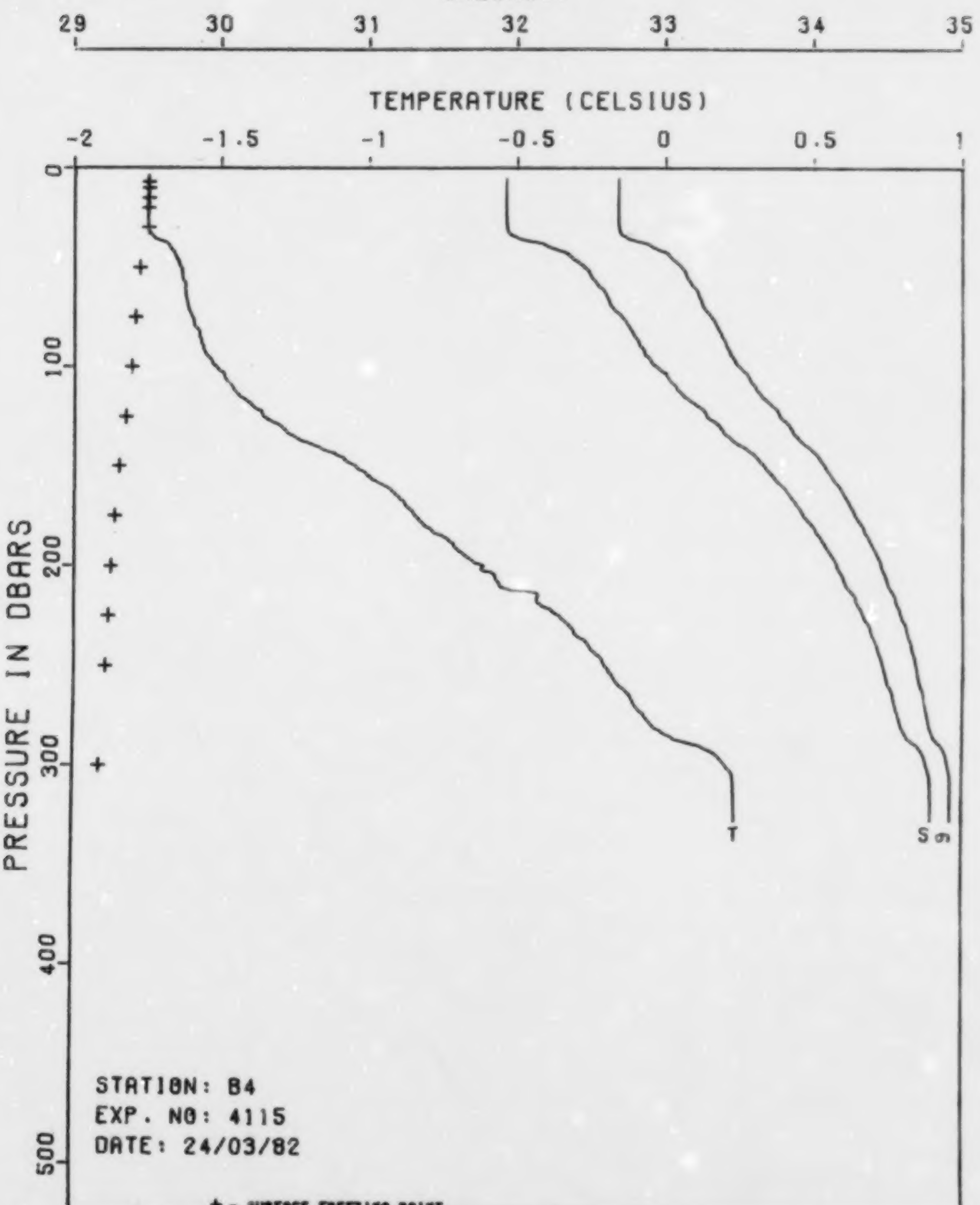
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
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32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
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PRESSURE IN DBARS
0
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STATION: B4
EXP. NO: 4115
DATE: 24/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE 84   EXPERIMENT 4115

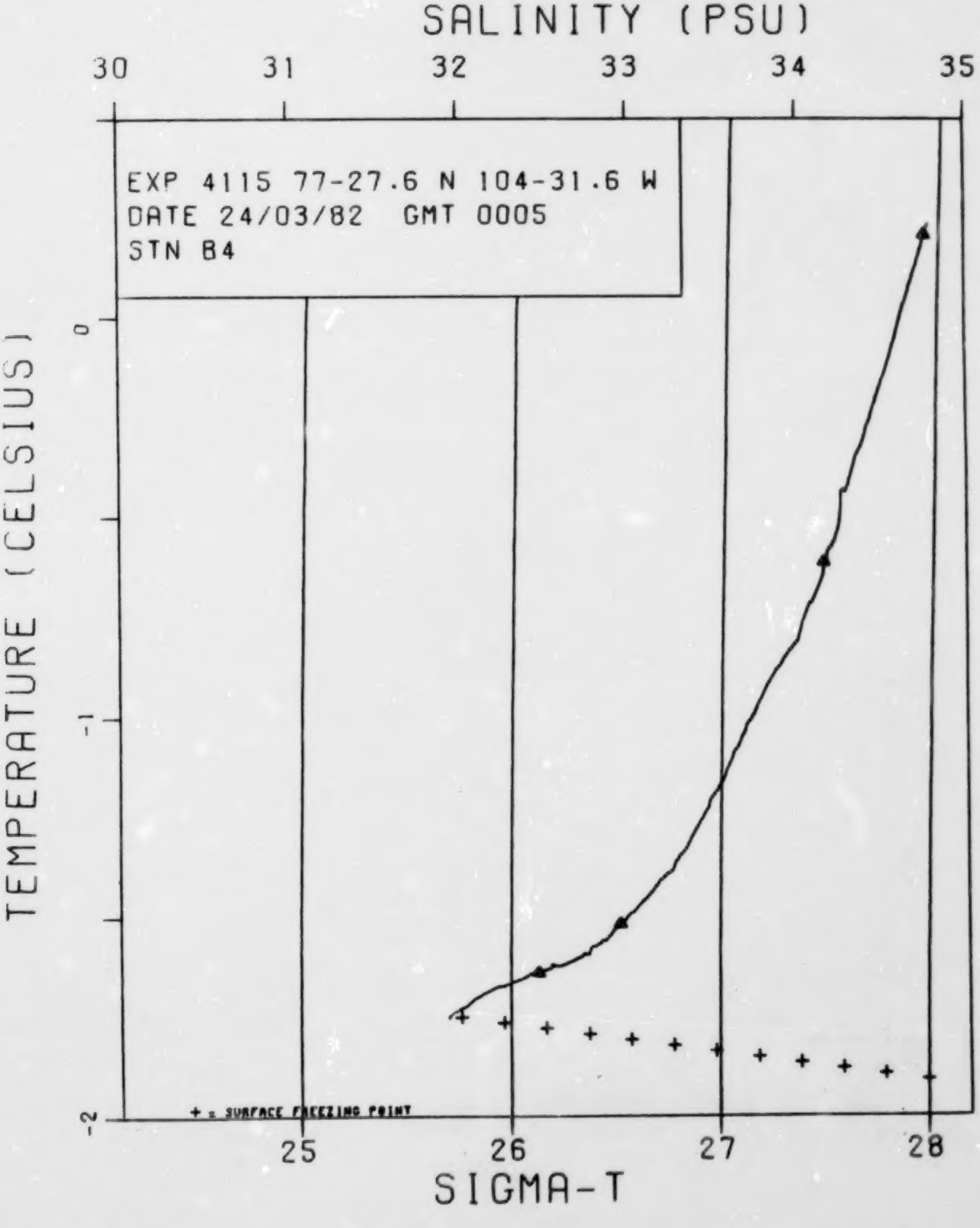
LAT.N. 77-27-35   LON.W. 104-31-35   DATE 24/ 3/82 G.M.T.   5

ICE THICKNESS   1.6 M   WATER DEPTH   329 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.753	.59039	31.925	25.680	.012	1436.9
6.0	-1.752	.59040	31.924	25.679	.014	1436.9
7.0	-1.753	.59041	31.925	25.680	.016	1436.9
8.0	-1.752	.59041	31.924	25.679	.018	1436.9
9.0	-1.752	.59042	31.924	25.679	.021	1437.0
10.0	-1.752	.59043	31.924	25.679	.023	1437.0
11.0	-1.752	.59044	31.924	25.679	.025	1437.0
12.0	-1.752	.59046	31.925	25.680	.028	1437.0
13.0	-1.752	.59045	31.923	25.679	.030	1437.0
14.0	-1.753	.59047	31.924	25.680	.032	1437.0
15.0	-1.752	.59047	31.924	25.679	.034	1437.1
16.0	-1.752	.59047	31.922	25.678	.037	1437.1
17.0	-1.752	.59049	31.923	25.678	.039	1437.1
18.0	-1.752	.59050	31.924	25.679	.041	1437.1
19.0	-1.752	.59051	31.923	25.678	.044	1437.1
20.0	-1.752	.59053	31.924	25.679	.046	1437.1
21.0	-1.752	.59054	31.924	25.679	.048	1437.2
22.0	-1.751	.59056	31.924	25.679	.051	1437.2
23.0	-1.751	.59059	31.924	25.679	.053	1437.2
24.0	-1.750	.59063	31.926	25.681	.055	1437.2
25.0	-1.750	.59065	31.926	25.680	.057	1437.2
27.5	-1.749	.59071	31.926	25.681	.063	1437.3
30.0	-1.748	.59085	31.932	25.686	.069	1437.3
32.5	-1.744	.59108	31.940	25.692	.075	1437.4
35.0	-1.726	.59239	31.997	25.738	.080	1437.6
37.5	-1.690	.59549	32.140	25.853	.086	1438.0
40.0	-1.674	.59723	32.224	25.922	.091	1438.3
42.5	-1.659	.59925	32.327	26.005	.096	1438.5
45.0	-1.652	.60009	32.368	26.038	.101	1438.7
47.5	-1.644	.60105	32.415	26.076	.106	1438.8
50.0	-1.640	.60185	32.455	26.109	.111	1438.9
55.0	-1.633	.60281	32.502	26.146	.120	1439.1
60.0	-1.624	.60390	32.553	26.188	.129	1439.3
65.0	-1.620	.60491	32.606	26.230	.138	1439.5
70.0	-1.613	.60572	32.643	26.261	.147	1439.6
75.0	-1.600	.60715	32.711	26.315	.156	1439.9
80.0	-1.589	.60819	32.758	26.353	.164	1440.1
85.0	-1.577	.60913	32.796	26.384	.172	1440.3
90.0	-1.559	.61027	32.841	26.420	.180	1440.5
95.0	-1.542	.61142	32.887	26.457	.188	1440.7
100.0	-1.517	.61286	32.942	26.501	.196	1441.0
105.0	-1.491	.61459	33.011	26.556	.203	1441.3
110.0	-1.461	.61623	33.073	26.606	.210	1441.6
115.0	-1.437	.61772	33.131	26.652	.217	1441.9

SITE 64 EXPERIMENT 4115

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.391	.62030	33.229	26.730	.224	1442.3
125.0	-1.358	.62189	33.283	26.773	.230	1442.6
130.0	-1.295	.62460	33.369	26.841	.236	1443.1
135.0	-1.253	.62645	33.428	26.888	.242	1443.5
140.0	-1.177	.62961	33.525	26.964	.248	1444.1
145.0	-1.100	.63254	33.608	27.029	.253	1444.6
150.0	-1.044	.63471	33.669	27.076	.258	1445.1
155.0	-1.000	.63658	33.725	27.120	.263	1445.4
160.0	-.946	.63873	33.788	27.169	.267	1445.9
165.0	-.902	.64054	33.840	27.210	.272	1446.2
170.0	-.874	.64191	33.887	27.246	.276	1446.5
175.0	-.846	.64323	33.928	27.279	.280	1446.8
180.0	-.814	.64494	33.988	27.326	.283	1447.1
185.0	-.752	.64696	34.034	27.361	.287	1447.5
190.0	-.716	.64843	34.075	27.392	.290	1447.8
195.0	-.675	.65006	34.120	27.428	.294	1448.2
200.0	-.613	.65189	34.153	27.451	.297	1448.6
210.0	-.563	.65406	34.215	27.500	.303	1449.1
220.0	-.416	.65845	34.299	27.561	.308	1450.0
230.0	-.324	.66172	34.375	27.616	.313	1450.7
240.0	-.259	.66398	34.425	27.655	.317	1451.2
250.0	-.205	.66589	34.467	27.687	.321	1451.7
260.0	-.155	.66766	34.505	27.715	.325	1452.2
270.0	-.100	.66965	34.550	27.748	.329	1452.6
280.0	-.040	.67165	34.591	27.778	.332	1453.1
290.0	.124	.67706	34.707	27.863	.335	1454.2
300.0	.206	.67984	34.765	27.905	.337	1454.8
310.0	.232	.68082	34.786	27.921	.339	1455.1
320.0	.233	.68097	34.787	27.922	.340	1455.3
327.2	.233	.68104	34.787	27.922	.342	1455.4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EXP 4115 77-27.6 N 104-31.6 W
DATE 24/03/82 GMT 0005
STN B4
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-2
+ = SURFACE FREEZING POINT
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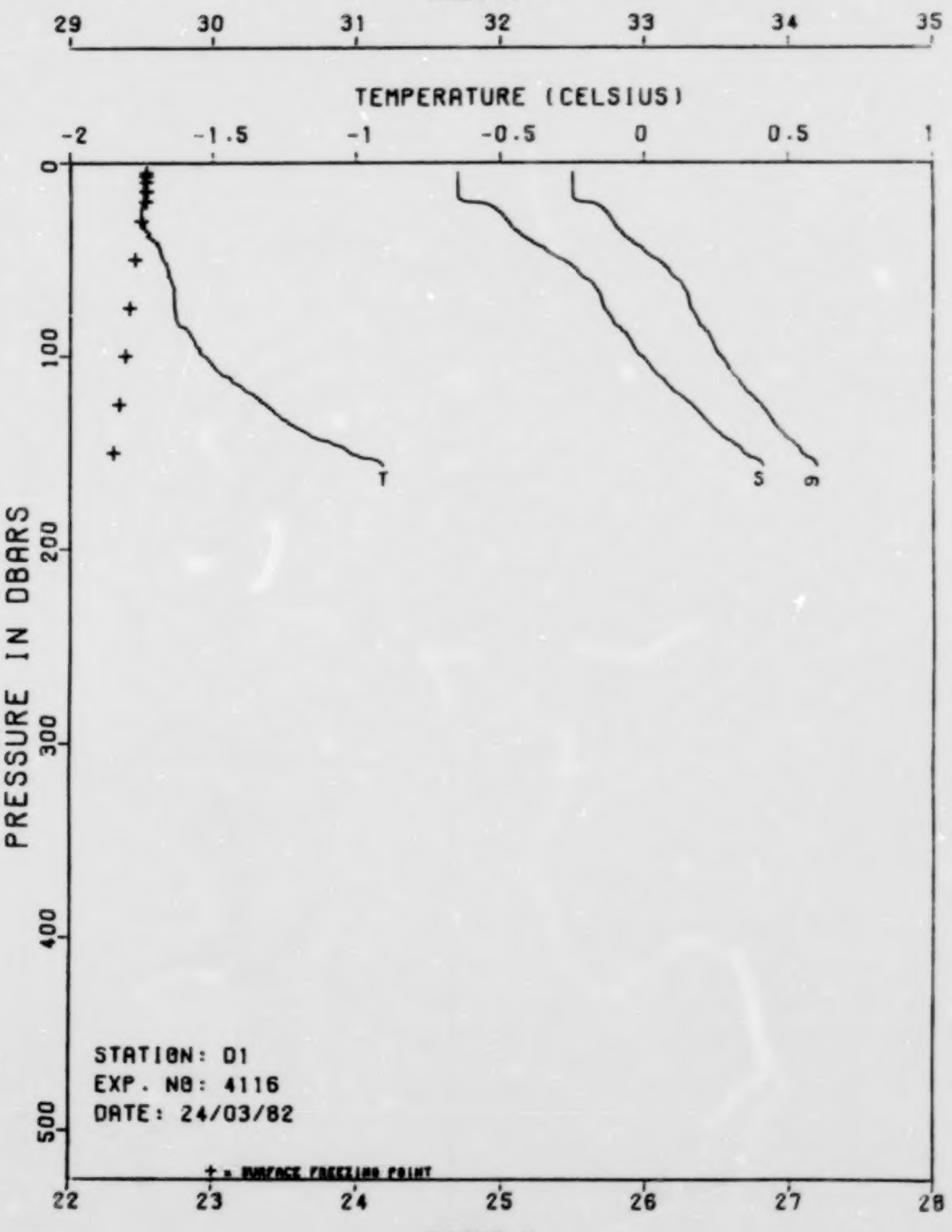
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: D1
EXP. NO: 4116
DATE: 24/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE D1   EXPERIMENT 4116

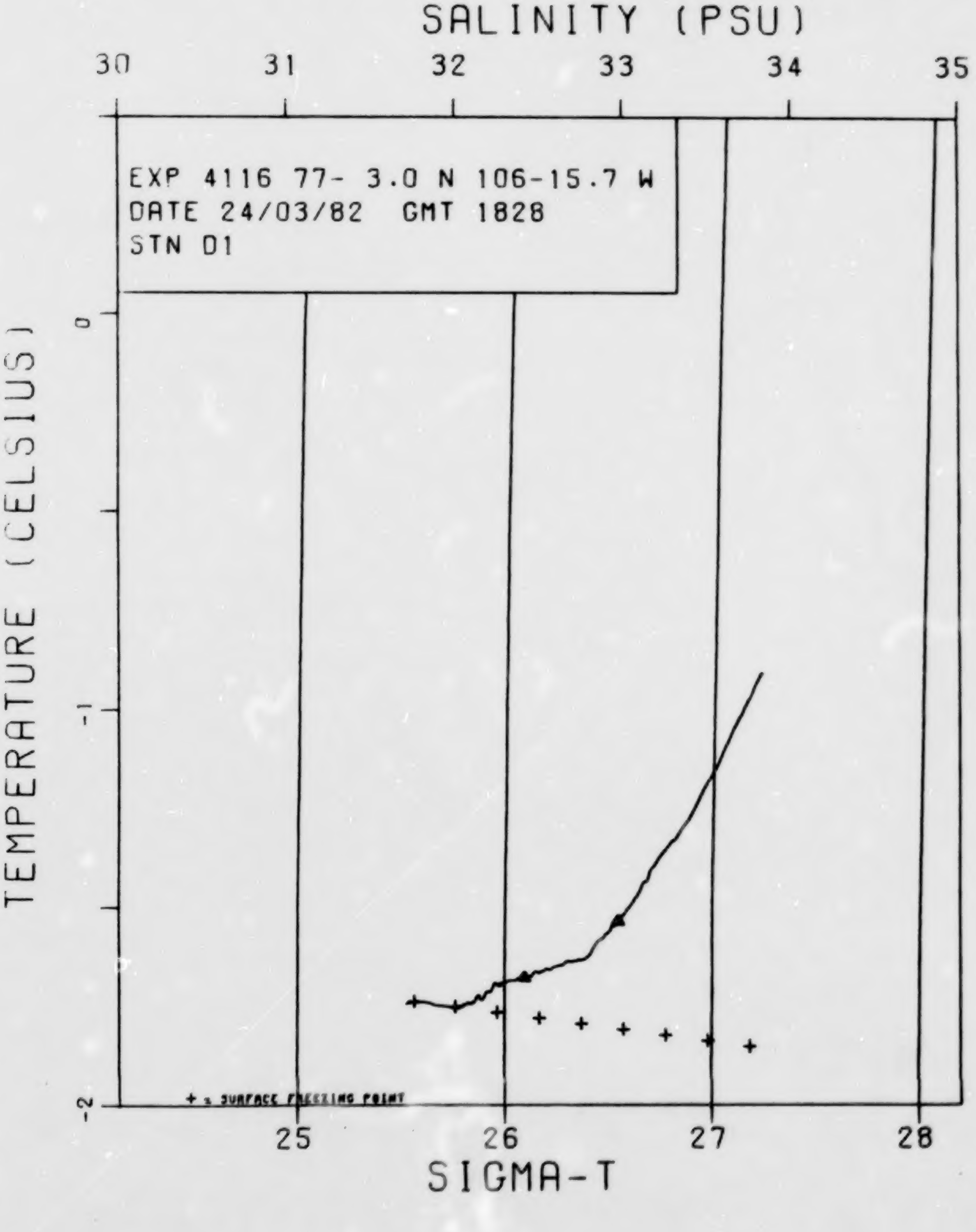
LAT.N. 77- 3- 0   LON.W. 106-15-42   DATE 24/ 3/82   G.M.T. 1828

ICE THICKNESS   1.8 M   WATER DEPTH   158   M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.1	-1.743	.58684	31.703	25.500	.013	1436.6
6.0	-1.743	.58684	31.704	25.500	.015	1436.6
7.0	-1.743	.58684	31.703	25.499	.017	1436.7
8.0	-1.743	.58684	31.703	25.499	.020	1436.7
9.0	-1.743	.58685	31.702	25.499	.022	1436.7
10.0	-1.742	.58686	31.702	25.498	.025	1436.7
11.0	-1.743	.58686	31.703	25.499	.027	1436.7
12.0	-1.743	.58689	31.703	25.499	.030	1436.7
13.0	-1.743	.58689	31.702	25.499	.032	1436.8
14.0	-1.743	.58691	31.703	25.499	.035	1436.8
15.0	-1.743	.58692	31.703	25.499	.037	1436.8
16.0	-1.743	.58692	31.703	25.499	.040	1436.8
17.0	-1.743	.58694	31.703	25.499	.042	1436.8
18.0	-1.742	.58698	31.704	25.500	.044	1436.8
19.0	-1.742	.58713	31.712	25.507	.047	1436.9
20.0	-1.740	.58757	31.736	25.526	.049	1436.9
21.0	-1.747	.58975	31.872	25.637	.052	1437.1
22.0	-1.750	.59053	31.920	25.676	.054	1437.2
23.0	-1.750	.59092	31.943	25.695	.056	1437.2
24.0	-1.753	.59131	31.968	25.715	.059	1437.3
25.0	-1.754	.59140	31.975	25.720	.061	1437.3
27.5	-1.755	.59206	32.013	25.751	.067	1437.4
30.0	-1.747	.59270	32.041	25.774	.072	1437.5
32.5	-1.743	.59321	32.066	25.794	.078	1437.6
35.0	-1.739	.59386	32.098	25.620	.083	1437.7
37.5	-1.724	.59487	32.141	25.855	.088	1437.9
40.0	-1.711	.59601	32.193	25.897	.094	1438.0
42.5	-1.695	.59720	32.244	25.938	.099	1438.2
45.0	-1.685	.59651	32.310	25.991	.104	1438.4
47.5	-1.685	.59927	32.353	26.027	.109	1438.5
50.0	-1.678	.60052	32.418	26.079	.114	1438.7
55.0	-1.660	.60266	32.522	26.164	.123	1439.0
60.0	-1.650	.60398	32.587	26.215	.132	1439.2
65.0	-1.637	.60549	32.659	26.274	.141	1439.5
70.0	-1.637	.60616	32.697	26.305	.150	1439.6
75.0	-1.637	.60659	32.718	26.322	.158	1439.7
80.0	-1.631	.60760	32.769	26.363	.166	1439.9
85.0	-1.604	.60898	32.817	26.401	.174	1440.2
90.0	-1.578	.61060	32.881	26.453	.182	1440.5
95.0	-1.558	.61174	32.924	26.487	.190	1440.7
100.0	-1.533	.61313	32.975	26.528	.198	1441.0
105.0	-1.498	.61490	33.038	26.578	.205	1441.3
110.0	-1.467	.61635	33.087	26.617	.212	1441.6
115.0	-1.408	.61874	33.159	26.674	.219	1442.1

SITE D1 EXPERIMENT 4116

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.357	.62121	33.245	26.742	.226	1442.5
125.0	-1.314	.62352	33.330	26.810	.232	1442.9
130.0	-1.278	.62529	33.391	26.856	.238	1443.2
135.0	-1.237	.62698	33.441	26.898	.244	1443.6
140.0	-1.170	.62973	33.525	26.963	.249	1444.1
145.0	-1.087	.63293	33.616	27.035	.254	1444.7
150.0	-1.024	.63540	33.667	27.090	.259	1445.2
155.0	-.917	.63963	33.811	27.186	.264	1445.9
157.3	-.906	.64012	33.828	27.200	.266	1446.0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35
EXP 4116 77- 3.0 N 106-15.7 W
DATE 24/03/82 GMT 1828
STN 01
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
25
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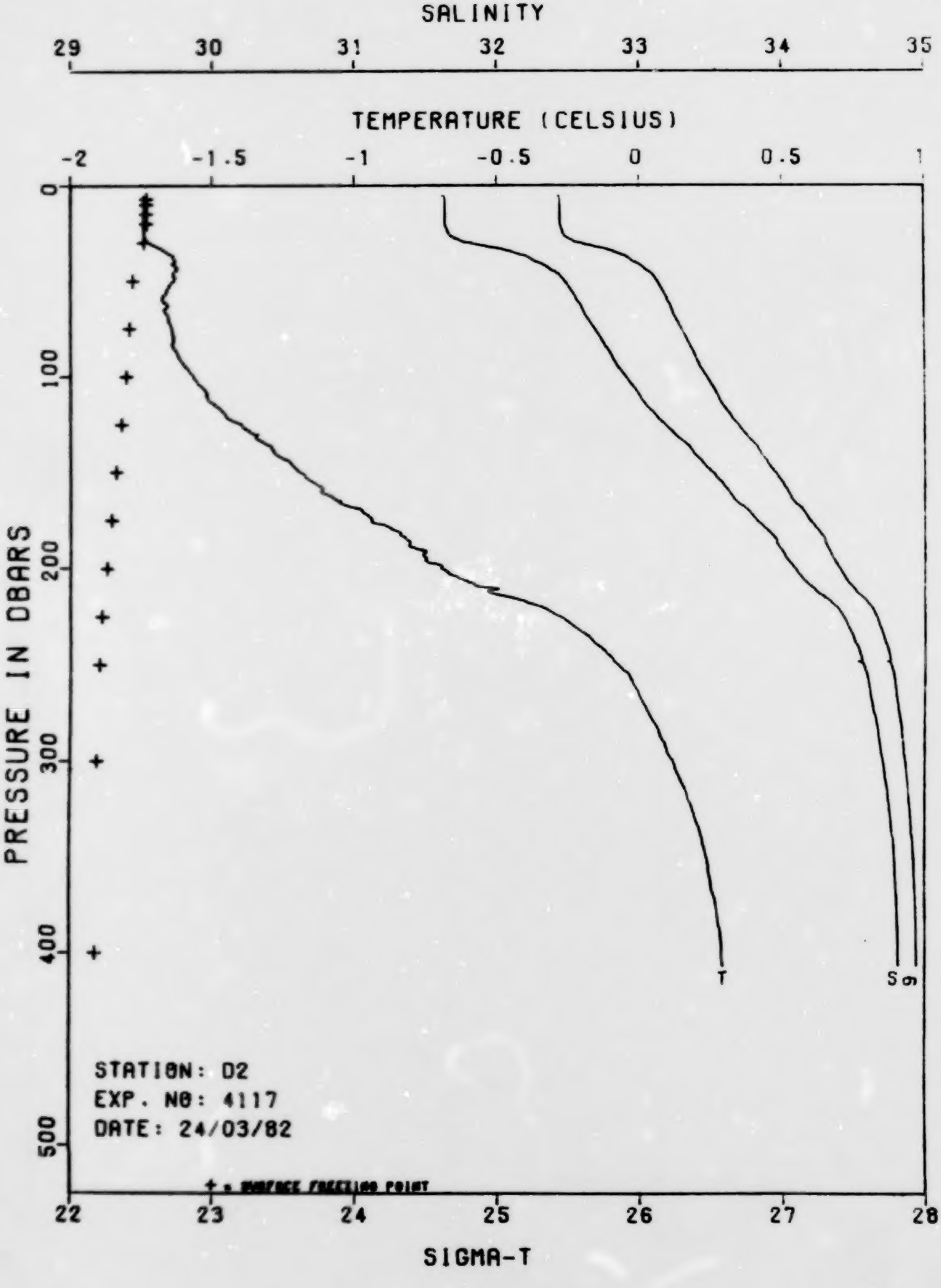
SIGMA-T


SALINITY
29
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33
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35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
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PRESSURE IN DBARS
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STATION: D2
EXP. NO: 4117
DATE: 24/03/82
+ = SURFACE FREEZING POINT
22
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE D2 EXPERIMENT 4117

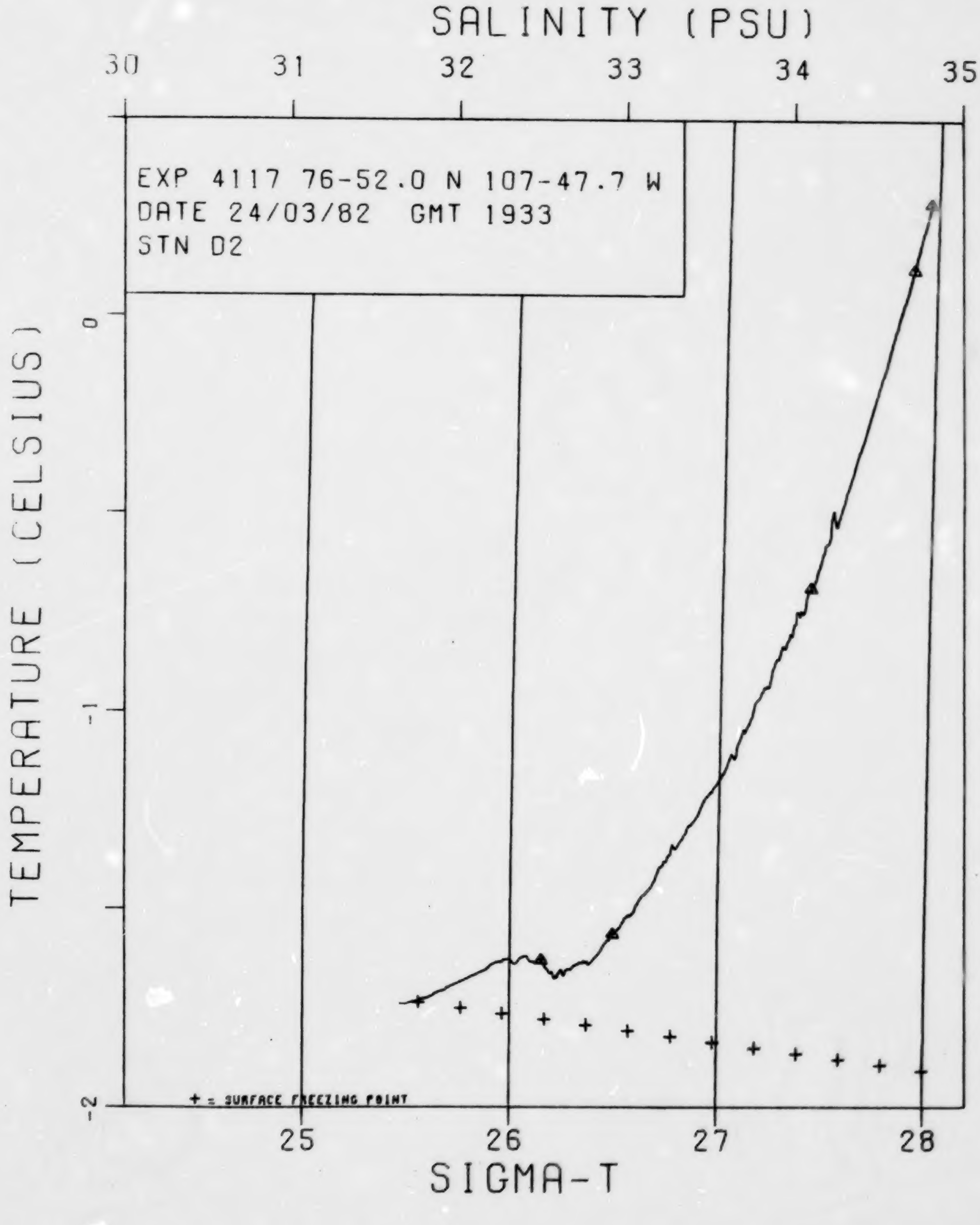
LAT.N. 76-52- 0 LON.W. 107-47-41 DATE 24/ 3/82 G.M.T. 1933

ICE THICKNESS 2.1 M WATER DEPTH 408 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.739					
6.0	-1.739	.58579	31.637	25.446	.015	1436.6
7.0	-1.739	.58579	31.637	25.445	.018	1436.6
8.0	-1.739	.58580	31.636	25.445	.020	1436.6
9.0	-1.740	.58582	31.638	25.446	.023	1436.6
10.0	-1.739	.58584	31.638	25.446	.025	1436.6
11.0	-1.740	.58583	31.637	25.446	.028	1436.7
12.0	-1.740	.58585	31.638	25.446	.030	1436.7
13.0	-1.740	.58586	31.638	25.446	.033	1436.7
14.0	-1.739	.58586	31.638	25.446	.035	1436.7
15.0	-1.741	.58589	31.639	25.447	.038	1436.7
16.0	-1.740	.58589	31.637	25.446	.040	1436.7
17.0	-1.741	.58590	31.639	25.447	.043	1436.7
18.0	-1.741	.58591	31.638	25.447	.045	1436.8
19.0	-1.740	.58592	31.638	25.447	.048	1436.8
20.0	-1.741	.58593	31.639	25.448	.050	1436.8
21.0	-1.740	.58595	31.639	25.447	.053	1436.8
22.0	-1.741	.58610	31.648	25.455	.055	1436.8
23.0	-1.741	.58623	31.655	25.461	.058	1436.9
24.0	-1.740	.58635	31.661	25.465	.060	1436.9
25.0	-1.740	.58637	31.662	25.466	.063	1436.9
27.5	-1.735	.58722	31.705	25.501	.069	1437.0
30.0	-1.724	.58916	31.807	25.584	.075	1437.3
32.5	-1.687	.59272	31.976	25.720	.081	1437.7
35.0	-1.657	.59583	32.127	25.842	.087	1438.1
37.5	-1.634	.59796	32.226	25.922	.092	1438.4
40.0	-1.627	.59906	32.282	25.967	.097	1438.6
42.5	-1.624	.60040	32.356	26.028	.102	1438.7
45.0	-1.631	.60116	32.408	26.070	.107	1438.8
47.5	-1.637	.60186	32.454	26.107	.112	1438.9
50.0	-1.633	.60243	32.483	26.131	.116	1439.0
55.0	-1.663	.60270	32.528	26.168	.126	1439.0
60.0	-1.673	.60320	32.566	26.199	.135	1439.1
65.0	-1.669	.60405	32.609	26.234	.144	1439.2
70.0	-1.653	.60501	32.645	26.263	.152	1439.4
75.0	-1.640	.60606	32.690	26.299	.161	1439.7
80.0	-1.635	.60699	32.736	26.336	.169	1439.8
85.0	-1.635	.60766	32.773	26.367	.178	1440.0
90.0	-1.616	.60878	32.816	26.401	.186	1440.2
95.0	-1.593	.60990	32.853	26.430	.194	1440.4
100.0	-1.564	.61137	32.906	26.472	.202	1440.7
105.0	-1.538	.61279	32.958	26.514	.209	1441.0
110.0	-1.522	.61398	33.007	26.554	.217	1441.2
115.0	-1.489	.61541	33.052	26.589	.224	1441.5

SITE D2   EXPERIMENT 4117

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.452	.61726	33.117	26.641	.231	1441.9
125.0	-1.393	.61956	33.185	26.694	.238	1442.3
130.0	-1.350	.62155	33.251	26.747	.244	1442.7
135.0	-1.311	.62368	33.329	26.809	.250	1443.1
140.0	-1.278	.62531	33.386	26.854	.256	1443.4
145.0	-1.223	.62751	33.450	26.904	.262	1443.8
150.0	-1.190	.62920	33.510	26.952	.268	1444.2
155.0	-1.147	.63120	33.575	27.004	.273	1444.5
160.0	-1.119	.63268	33.628	27.045	.278	1444.8
165.0	-1.048	.63499	33.660	27.085	.283	1445.3
170.0	-.970	.63799	33.765	27.152	.288	1445.9
175.0	-.941	.63956	33.821	27.196	.292	1446.2
180.0	-.865	.64238	33.898	27.255	.296	1446.7
185.0	-.816	.64443	33.958	27.302	.300	1447.1
190.0	-.778	.64577	33.990	27.326	.304	1447.4
195.0	-.748	.64713	34.032	27.359	.307	1447.7
200.0	-.691	.64919	34.085	27.399	.311	1448.1
210.0	-.540	.65434	34.206	27.491	.317	1449.1
220.0	-.346	.66119	34.375	27.619	.322	1450.4
230.0	-.233	.66499	34.459	27.681	.326	1451.2
240.0	-.148	.66794	34.525	27.731	.330	1451.9
250.0	-.076	.67027	34.571	27.764	.333	1452.5
260.0	-.022	.67210	34.609	27.792	.337	1452.9
270.0	.014	.67334	34.633	27.809	.339	1453.3
280.0	.052	.67472	34.662	27.831	.342	1453.7
290.0	.085	.67590	34.685	27.847	.345	1454.0
300.0	.120	.67709	34.708	27.864	.347	1454.4
310.0	.146	.67799	34.723	27.875	.349	1454.7
320.0	.171	.67890	34.740	27.887	.351	1455.0
330.0	.196	.67974	34.754	27.897	.353	1455.3
340.0	.219	.68062	34.772	27.910	.355	1455.6
350,0	.233	.68120	34.782	27.916	.357	1455.8
360.0	.245	.68165	34.788	27.921	.359	1456.0
370.0	.259	.68218	34.796	27.927	.361	1456.3
380.0	.271	.68264	34.803	27.932	.362	1456.5
390.0	.284	.68308	34.807	27.935	.364	1456.7
400.0	.287	.68330	34.809	27.937	.366	1456.9
407.3	.292	.68332	34.812	27.939	.367	1457.0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32
33
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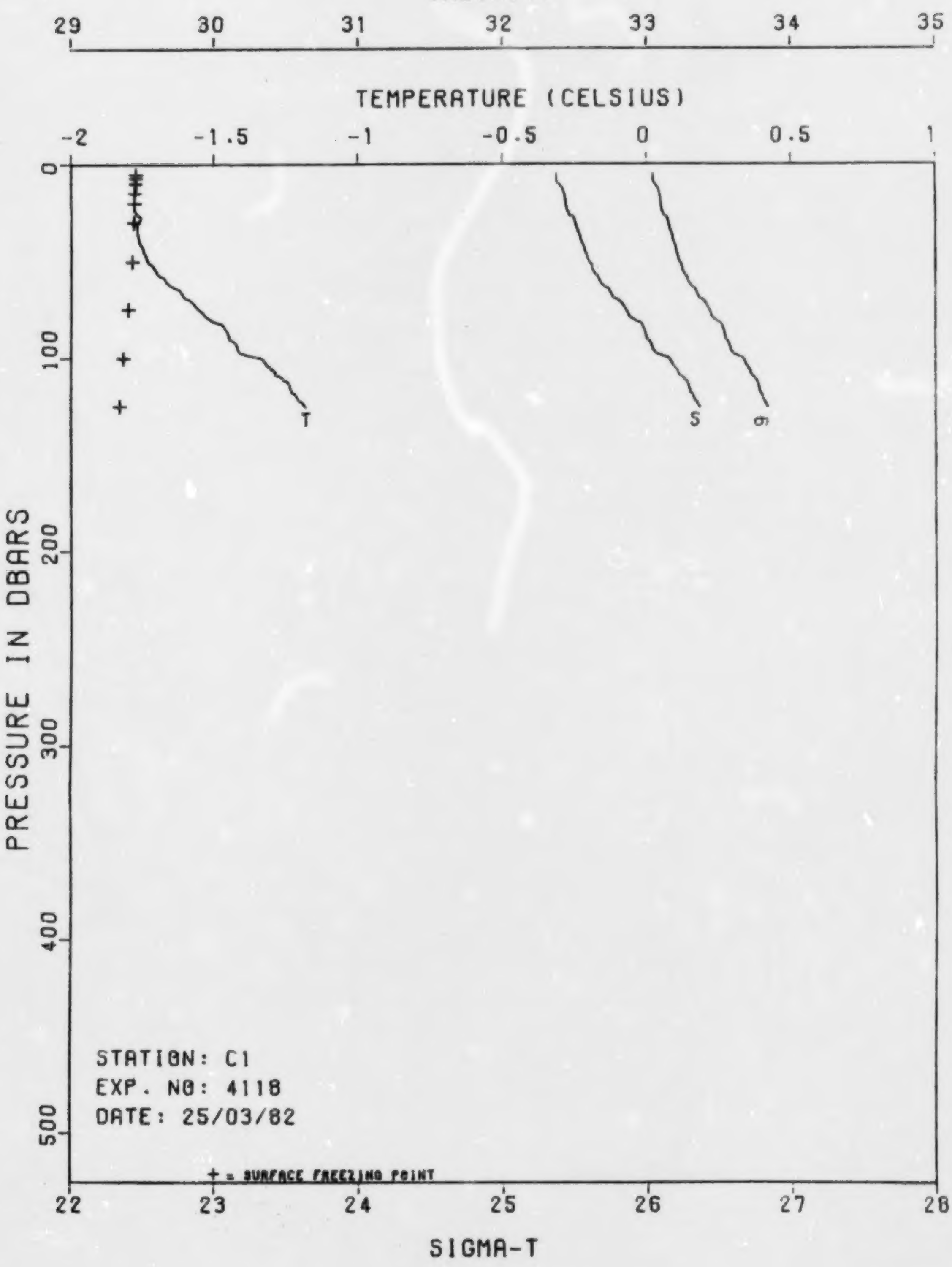
35
EXP 4117 76-52.0 N 107-47.7 W
DATE 24/03/82 GMT 1933
STN D2
TEMPERATURE (CELSIUS)
0
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
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STATION: C1
EXP. NO: 4118
DATE: 25/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE C1 EXPERIMENT 4118

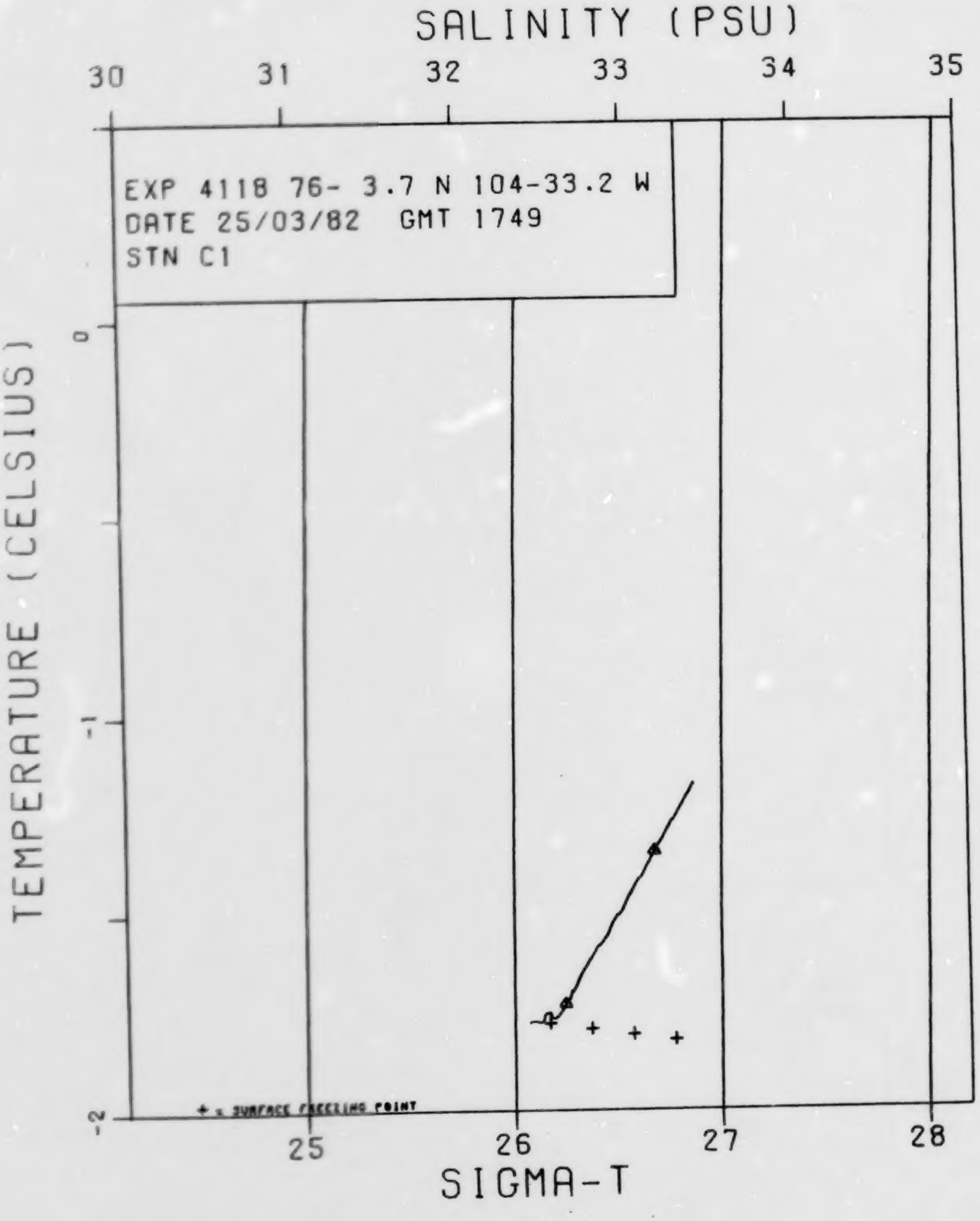
LAT.N. 76- 3-41 LON.W. 104-33-11 DATE 25/ 3/82 G.M.T. 1749

ICE THICKNESS 2.0 M WATER DEPTH 130 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.0	-1.779	.59753	32.378	26.048	.010	1437.4
6.0	-1.777	.59753	32.376	26.047	.012	1437.4
7.0	-1.778	.59753	32.376	26.047	.014	1437.4
8.0	-1.778	.59755	32.377	26.048	.016	1437.5
9.0	-1.777	.59755	32.376	26.047	.018	1437.5
10.0	-1.777	.59767	32.382	26.052	.019	1437.5
11.0	-1.775	.59806	32.402	26.068	.021	1437.6
12.0	-1.775	.59825	32.413	26.077	.023	1437.6
13.0	-1.776	.59841	32.423	26.085	.025	1437.6
14.0	-1.777	.59844	32.425	26.087	.027	1437.6
15.0	-1.778	.59847	32.427	26.089	.029	1437.6
16.0	-1.779	.59858	32.434	26.095	.031	1437.7
17.0	-1.779	.59863	32.436	26.096	.033	1437.7
18.0	-1.778	.59867	32.437	26.097	.035	1437.7
19.0	-1.778	.59868	32.438	26.097	.037	1437.7
20.0	-1.779	.59872	32.440	26.099	.039	1437.7
21.0	-1.779	.59875	32.441	26.100	.041	1437.8
22.0	-1.779	.59882	32.445	26.103	.042	1437.8
23.0	-1.778	.59888	32.447	26.104	.044	1437.8
24.0	-1.778	.59890	32.447	26.105	.046	1437.8
25.0	-1.774	.59914	32.456	26.112	.048	1437.9
27.5	-1.753	.60012	32.491	26.140	.053	1438.1
30.0	-1.767	.60015	32.505	26.152	.057	1438.1
32.5	-1.768	.60026	32.512	26.158	.062	1438.1
35.0	-1.767	.60051	32.525	26.168	.067	1438.2
37.5	-1.764	.60086	32.540	26.180	.071	1438.2
40.0	-1.761	.60105	32.547	26.186	.076	1438.3
42.5	-1.750	.60156	32.563	26.199	.080	1438.4
45.0	-1.745	.60182	32.572	26.206	.085	1438.5
47.5	-1.736	.60225	32.585	26.216	.089	1438.6
50.0	-1.730	.60258	32.598	26.226	.094	1438.7
55.0	-1.701	.60367	32.627	26.250	.103	1438.9
60.0	-1.667	.60509	32.672	26.285	.111	1439.3
65.0	-1.618	.60723	32.741	26.340	.120	1439.7
70.0	-1.584	.60890	32.800	26.387	.128	1440.0
75.0	-1.555	.61041	32.853	26.430	.136	1440.3
80.0	-1.512	.61209	32.903	26.469	.144	1440.6
85.0	-1.461	.61437	32.978	26.528	.151	1441.1
90.0	-1.447	.61502	32.998	26.544	.159	1441.2
95.0	-1.416	.61636	33.040	26.577	.166	1441.5
100.0	-1.337	.61976	33.149	26.664	.173	1442.1
105.0	-1.305	.62119	33.195	26.700	.180	1442.4
110.0	-1.268	.62280	33.245	26.740	.186	1442.8
115.0	-1.233	.62434	33.294	26.779	.193	1443.1

SITE C1 EXPERIMENT 4118

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.211	.62533	33.325	26.803	.199	1443.3
125.0	-1.182	.62658	33.363	26.832	.205	1443.6
125.6	-1.175	.62690	33.373	26.841	.206	1443.6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35
EXP 4118 76- 3.7 N 104-33.2 W
DATE 25/03/82 GMT 1749
STN C1
TEMPERATURE (CELSIUS)
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-2
+ = SURFACE FREEZING POINT
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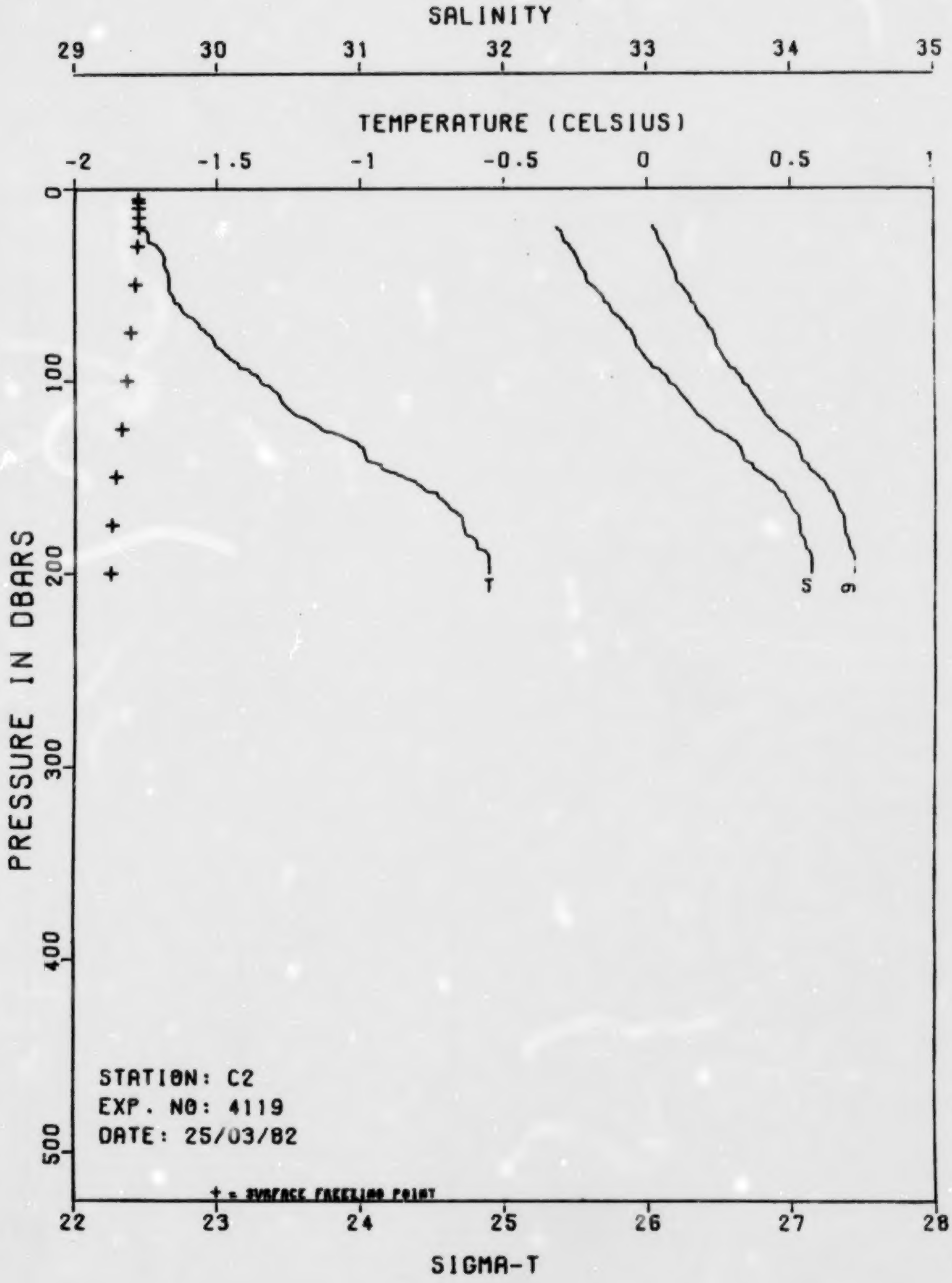
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
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STATION: C2
EXP. NO: 4119
DATE: 25/03/82
+ = SURFACE FREEZING POINT
22
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE C2 EXPERIMENT 4119

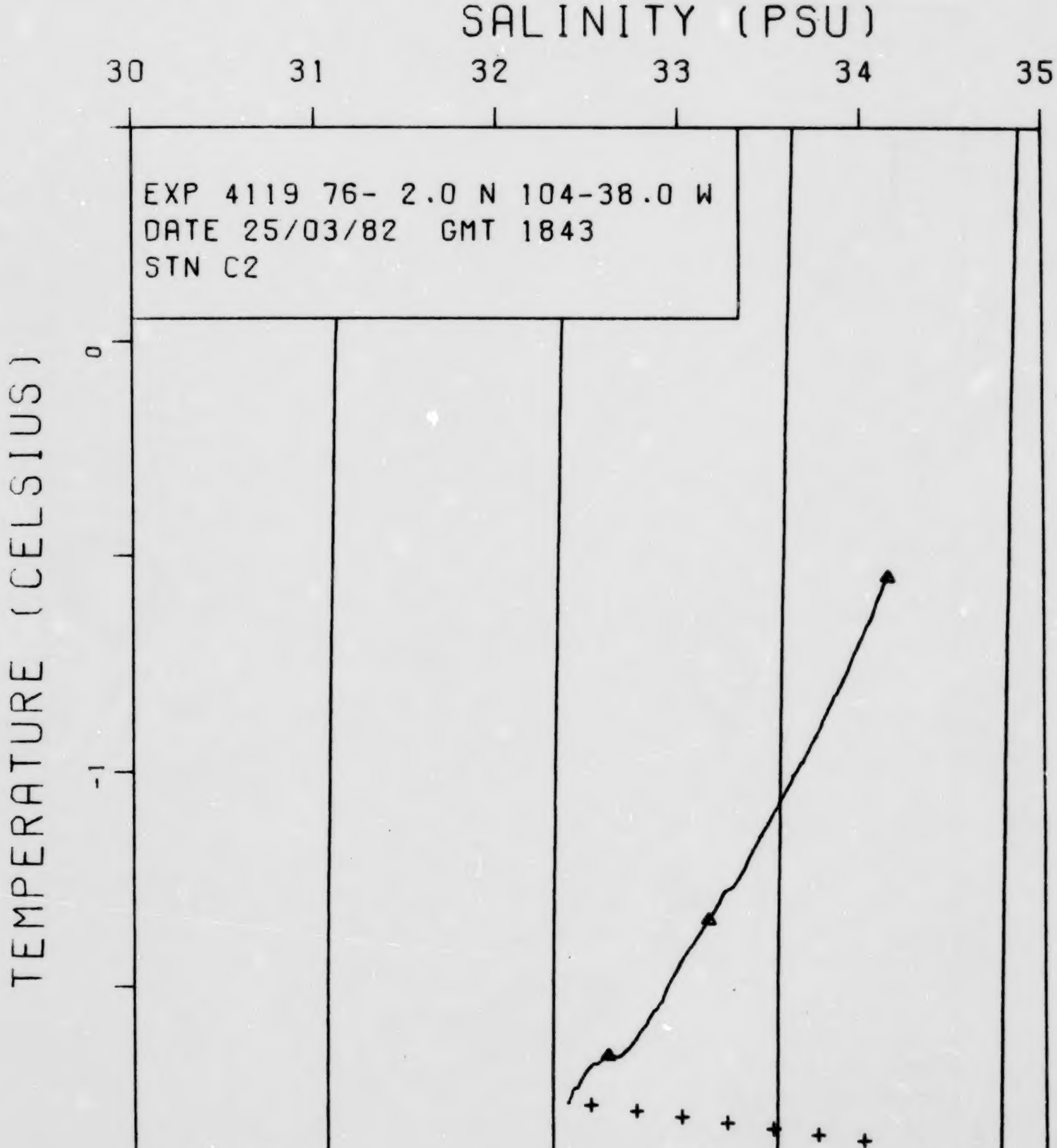
LAT.N. 76- 2- 0 LON.W. 104-38- 0 DATE 25/ 3/82 G.M.T. 1843

ICE THICKNESS 1.8 M WATER DEPTH 203 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.774					
6.0	-1.775					
7.0	-1.774					
8.0	-1.774					
9.0	-1.774					
10.0	-1.774					
11.0	-1.774					
12.0	-1.774					
13.0	-1.774					
14.0	-1.774					
15.0	-1.774	.59765	32.374	26.045	.029	1437.6
16.0	-1.774	.59765	32.374	26.045	.031	1437.6
17.0	-1.775	.59763	32.373	26.044	.033	1437.6
18.0	-1.774	.59759	32.368	26.041	.035	1437.6
19.0	-1.774	.59753	32.365	26.038	.037	1437.6
20.0	-1.773	.59755	32.364	26.037	.039	1437.7
21.0	-1.768	.59787	32.377	26.048	.041	1437.7
22.0	-1.742	.59874	32.400	26.066	.043	1437.9
23.0	-1.741	.59889	32.407	26.071	.045	1437.9
24.0	-1.740	.59898	32.410	26.074	.047	1438.0
25.0	-1.739	.59903	32.411	26.075	.049	1438.0
27.5	-1.740	.59923	32.423	26.085	.054	1438.0
30.0	-1.708	.60049	32.462	26.115	.058	1438.3
32.5	-1.696	.60114	32.485	26.134	.063	1438.4
35.0	-1.686	.60173	32.508	26.152	.068	1438.5
37.5	-1.682	.60204	32.521	26.163	.072	1438.6
40.0	-1.684	.60224	32.534	26.173	.077	1438.7
42.5	-1.674	.60284	32.556	26.191	.081	1438.8
45.0	-1.669	.60329	32.576	26.207	.086	1438.9
47.5	-1.668	.60337	32.578	26.209	.090	1438.9
50.0	-1.665	.60389	32.605	26.230	.095	1439.0
55.0	-1.659	.60529	32.678	26.290	.104	1439.2
60.0	-1.637	.60657	32.726	26.329	.112	1439.5
65.0	-1.615	.60766	32.764	26.358	.120	1439.7
70.0	-1.567	.60986	32.837	26.417	.128	1440.1
75.0	-1.537	.61142	32.894	26.462	.136	1440.4
80.0	-1.507	.61247	32.919	26.482	.144	1440.7
85.0	-1.477	.61376	32.960	26.514	.152	1441.0
90.0	-1.440	.61530	33.007	26.551	.159	1441.3
95.0	-1.383	.61794	33.096	26.623	.166	1441.8
100.0	-1.347	.61958	33.150	26.665	.173	1442.1
105.0	-1.304	.62153	33.214	26.716	.180	1442.5
110.0	-1.279	.62303	33.271	26.761	.186	1442.8
115.0	-1.249	.62451	33.322	26.802	.193	1443.0

SITE C2 EXPERIMENT 4119

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.185	.62703	33.395	26.859	.199	1443.5
125.0	-1.135	.62914	33.460	26.910	.204	1443.9
130.0	-1.047	.63290	33.579	27.003	.210	1444.6
135.0	-.986	.63539	33.655	27.063	.215	1445.1
140.0	-.980	.63590	33.674	27.078	.220	1445.2
145.0	-.924	.63814	33.738	27.127	.224	1445.6
150.0	-.851	.64104	33.821	27.192	.229	1446.2
155.0	-.787	.64360	33.896	27.251	.233	1446.7
160.0	-.728	.64594	33.961	27.301	.237	1447.1
165.0	-.693	.64728	33.997	27.329	.241	1447.4
170.0	-.651	.64906	34.050	27.370	.244	1447.8
175.0	-.642	.64941	34.057	27.375	.248	1447.9
180.0	-.634	.64972	34.064	27.380	.251	1448.0
185.0	-.594	.65119	34.100	27.406	.254	1448.3
190.0	-.558	.65257	34.136	27.435	.258	1448.6
195.0	-.552	.65285	34.143	27.441	.261	1448.8
200.0	-.553	.65290	34.143	27.441	.264	1448.8
200.3	-.552	.65290	34.142	27.439	.264	1448.8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33
34
35
EXP 4119 76- 2.0 N 104-38.0 W
DATE 25/03/82 GMT 1843
STN C2
TEMPERATURE (CELSIUS)
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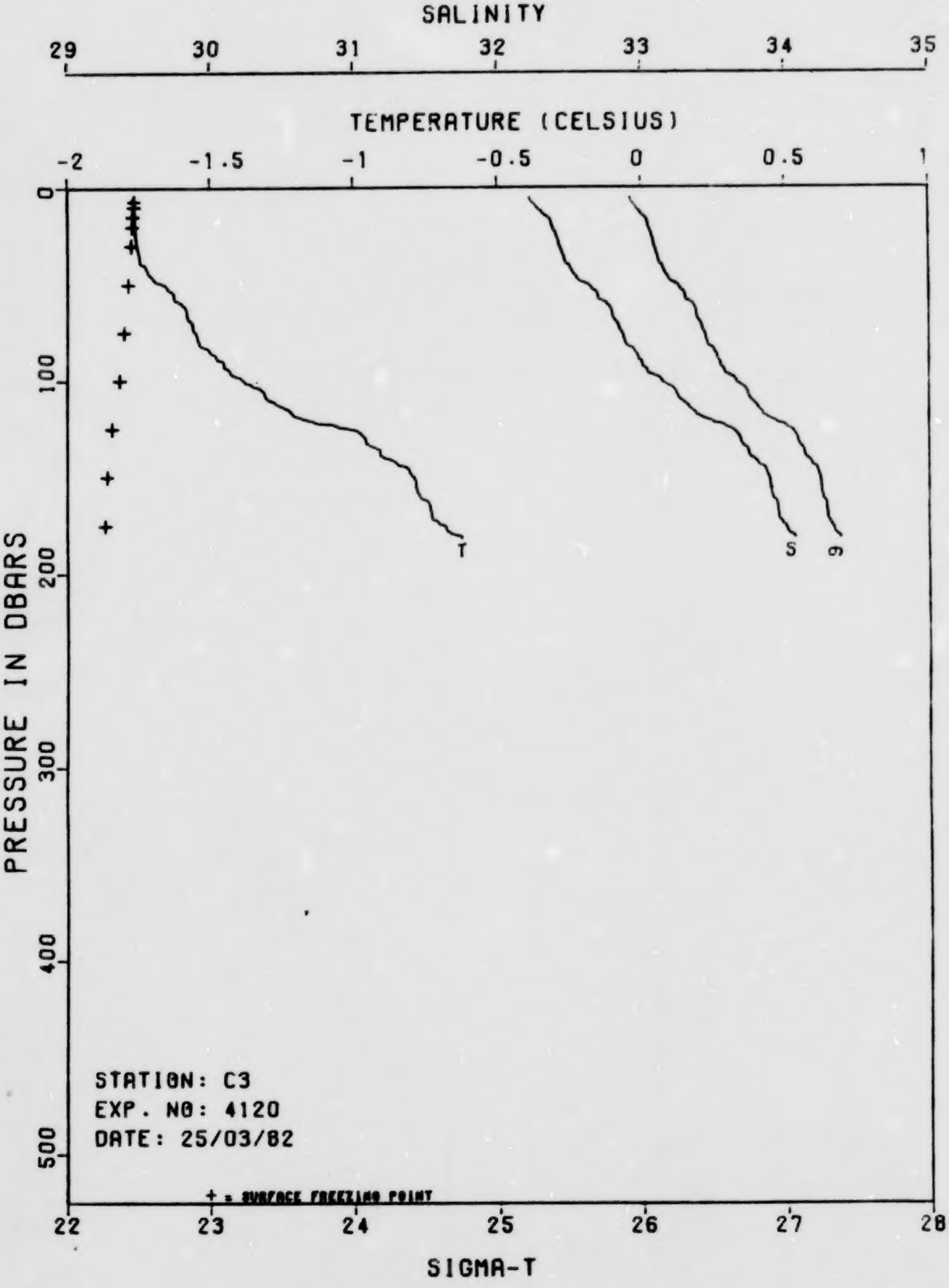
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
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STATION: C3
EXP. NO: 4120
DATE: 25/03/82
+ = SURFACE FREEZING POINT
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24
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28
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE C3 EXPERIMENT 4120

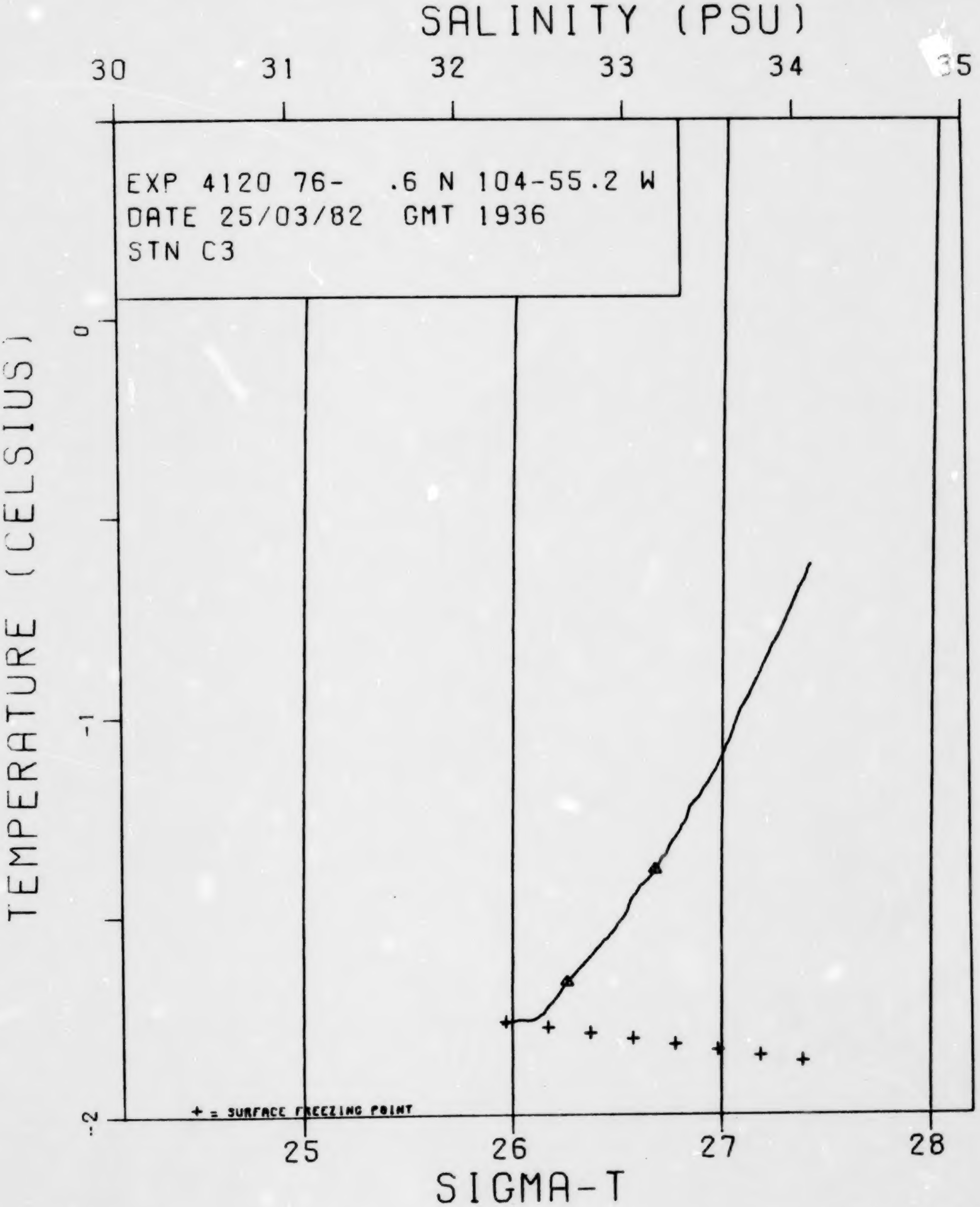
LAT.N. 76- 0-36 LON.W. 104-55-11 DATE 25/ 3/82 G.M.T. 1936

ICE THICKNESS 1.9 M WATER DEPTH 185 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.5	-1.771	.59511	32.226	25.925	.012	1437.2
6.0	-1.771	.59516	32.228	25.927	.013	1437.3
7.0	-1.770	.59535	32.238	25.934	.015	1437.3
8.0	-1.770	.59546	32.243	25.939	.017	1437.3
9.0	-1.768	.59581	32.261	25.954	.019	1437.4
10.0	-1.766	.59608	32.275	25.965	.021	1437.4
11.0	-1.765	.59625	32.283	25.971	.023	1437.4
12.0	-1.764	.59654	32.299	25.984	.025	1437.5
13.0	-1.762	.59680	32.312	25.994	.027	1437.5
14.0	-1.762	.59695	32.320	26.001	.029	1437.6
15.0	-1.761	.59730	32.339	26.016	.031	1437.6
16.0	-1.763	.59771	32.365	26.036	.033	1437.6
17.0	-1.763	.59786	32.373	26.045	.035	1437.7
18.0	-1.764	.59791	32.377	26.047	.037	1437.7
19.0	-1.763	.59796	32.378	26.049	.039	1437.7
20.0	-1.763	.59805	32.383	26.052	.041	1437.7
21.0	-1.763	.59813	32.386	26.055	.042	1437.8
22.0	-1.761	.59823	32.391	26.059	.044	1437.8
23.0	-1.761	.59845	32.402	26.068	.046	1437.8
24.0	-1.761	.59858	32.409	26.073	.048	1437.9
25.0	-1.760	.59866	32.413	26.076	.050	1437.9
27.5	-1.758	.59891	32.424	26.086	.055	1437.9
30.0	-1.757	.59905	32.429	26.090	.060	1438.0
32.5	-1.753	.59944	32.447	26.104	.065	1438.1
35.0	-1.749	.59970	32.456	26.112	.069	1438.2
37.5	-1.746	.59998	32.468	26.121	.074	1438.2
40.0	-1.727	.60084	32.497	26.145	.079	1438.4
42.5	-1.720	.60126	32.513	26.157	.083	1438.5
45.0	-1.713	.60176	32.533	26.173	.088	1438.6
47.5	-1.698	.60249	32.559	26.194	.092	1438.7
50.0	-1.663	.60416	32.618	26.241	.097	1439.0
55.0	-1.627	.60625	32.699	26.306	.106	1439.4
60.0	-1.597	.60792	32.762	26.357	.114	1439.7
65.0	-1.581	.60891	32.800	26.387	.122	1439.9
70.0	-1.561	.60985	32.831	26.412	.130	1440.1
75.0	-1.549	.61070	32.865	26.439	.138	1440.3
80.0	-1.538	.61139	32.890	26.459	.146	1440.5
85.0	-1.501	.61328	32.958	26.513	.154	1440.9
90.0	-1.457	.61487	33.000	26.546	.161	1441.2
95.0	-1.430	.61614	33.043	26.580	.168	1441.5
100.0	-1.384	.61875	33.143	26.660	.175	1441.9
105.0	-1.319	.62161	33.235	26.733	.182	1442.4
110.0	-1.298	.62263	33.269	26.760	.188	1442.7
115.0	-1.228	.62533	33.347	26.821	.195	1443.2

SITE C3 EXPERIMENT 4120

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.176	.62793	33.439	26.894	.201	1443.6
125.0	-1.019	.63411	33.621	27.036	.206	1444.7
130.0	-.958	.63649	33.689	27.089	.211	1445.2
135.0	-.920	.63806	33.734	27.125	.216	1445.5
140.0	-.894	.63918	33.768	27.151	.220	1445.7
145.0	-.817	.64227	33.858	27.221	.224	1446.3
150.0	-.794	.64324	33.866	27.242	.229	1446.5
155.0	-.781	.64381	33.901	27.254	.233	1446.7
160.0	-.768	.64435	33.915	27.265	.237	1446.9
165.0	-.732	.64575	33.953	27.294	.240	1447.2
170.0	-.726	.64599	33.959	27.300	.244	1447.3
175.0	-.684	.64766	34.003	27.333	.248	1447.6
180.0	-.643	.64937	34.054	27.372	.252	1448.0
181.9	-.623	.65015	34.074	27.388	.253	1448.1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34
35
EXP 4120 76- .6 N 104-55.2 W
DATE 25/03/82 GMT 1936
STN C3
TEMPERATURE (CELSIUS)
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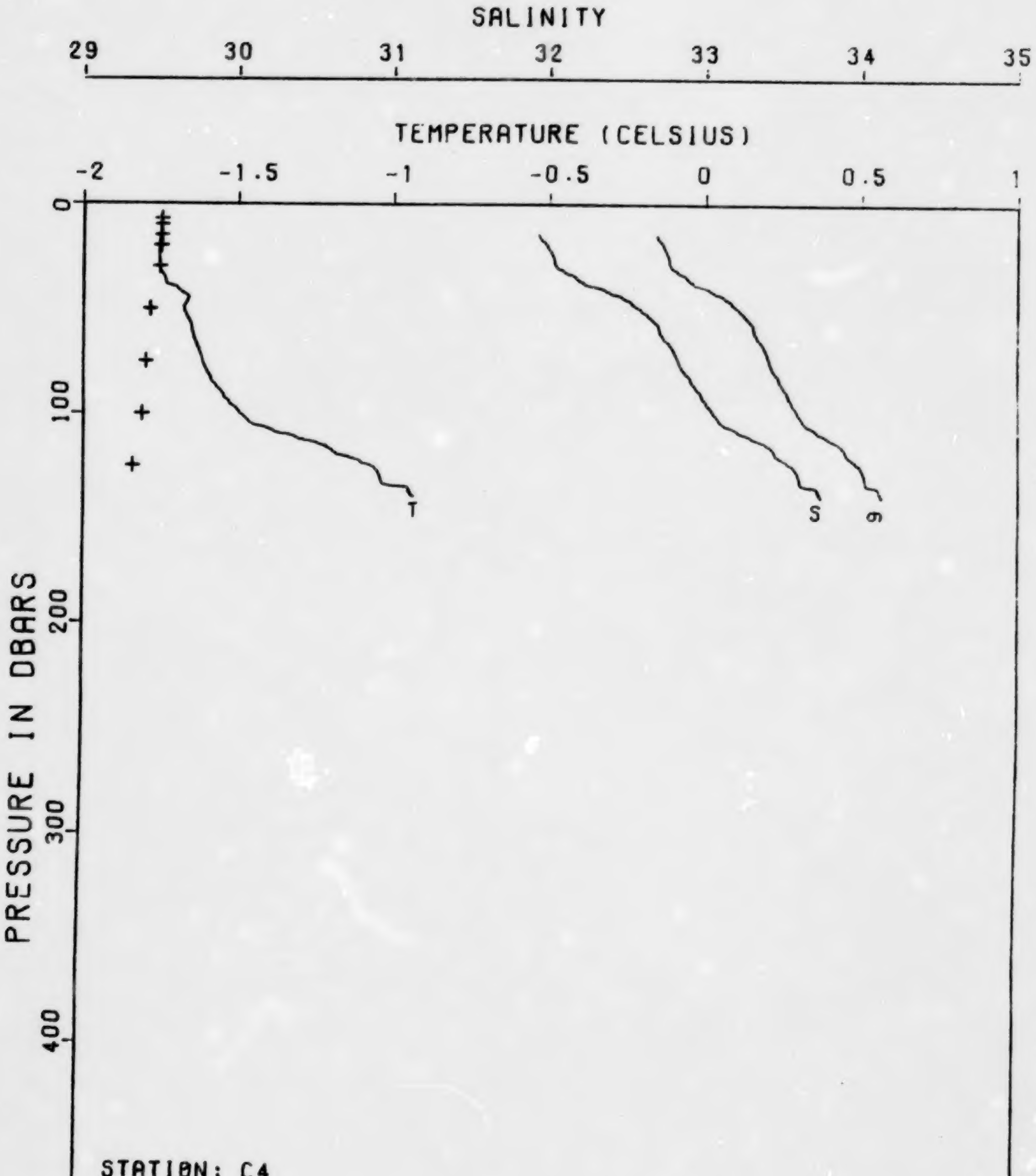
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
300
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500
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σ
STATION: C4
EXP. NO: 4121
DATE: 25/03/82
+ = SURFACE FREEZING POINT
22
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28
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE C4 EXPERIMENT 4121

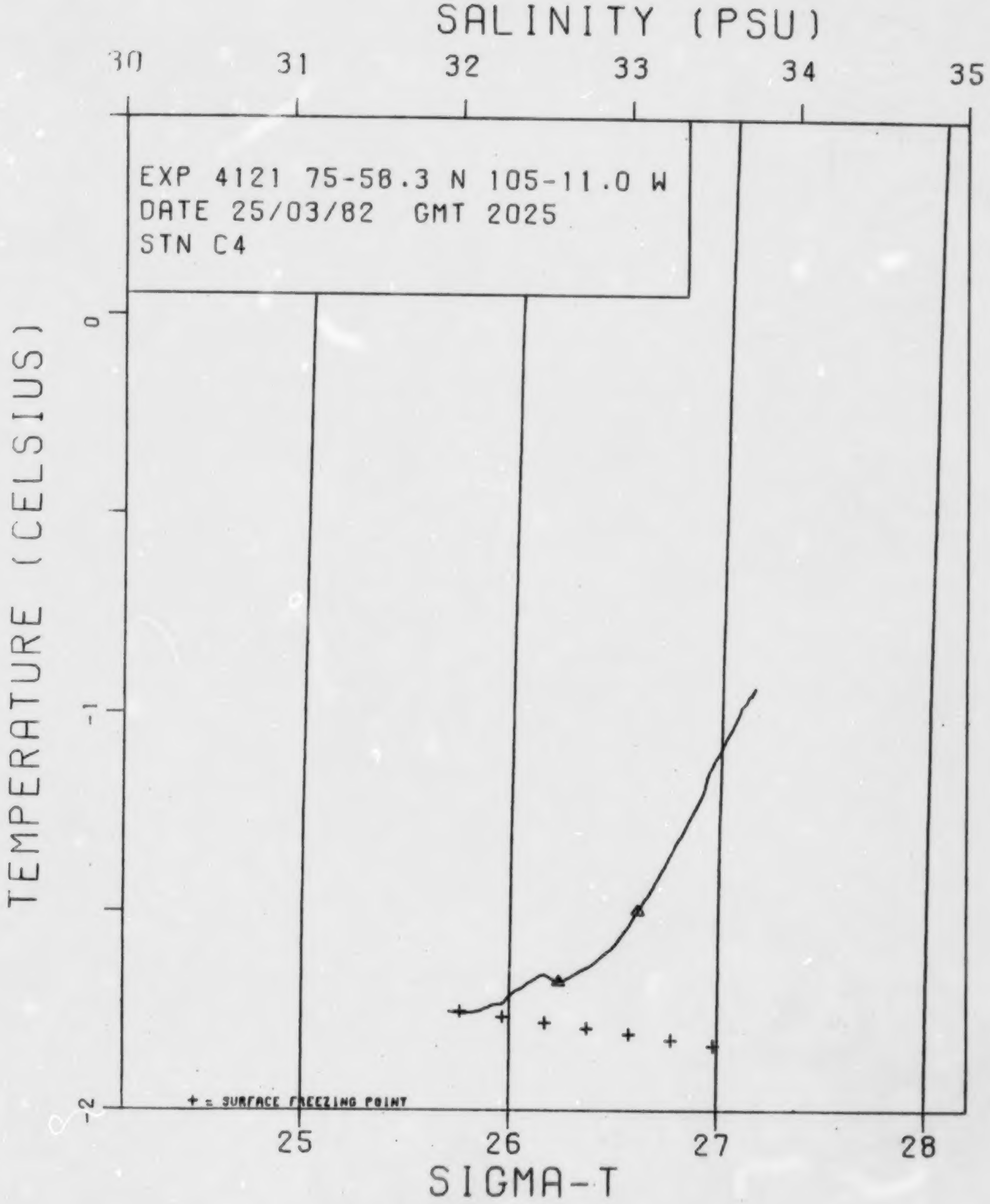
LAT.N. 75-58-16 LON.W. 105-11- 0 DATE 25/ 3/82 G.M.T. 2025

ICE THICKNESS 1.9 M WATER DEPTH 144 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.4	-1.752					
6.0	-1.752					
7.0	-1.751					
8.0	-1.752					
9.0	-1.751					
10.0	-1.752					
11.0	-1.751					
12.0	-1.752					
13.0	-1.751					
14.0	-1.751					
15.1	-1.751	.59064	31.932	25.686	.035	1437.1
16.0	-1.752	.59075	31.939	25.692	.037	1437.1
17.0	-1.753	.59097	31.953	25.703	.040	1437.1
18.0	-1.754	.59124	31.969	25.716	.042	1437.2
19.0	-1.755	.59139	31.979	25.724	.044	1437.2
20.0	-1.756	.59157	31.990	25.733	.047	1437.2
21.0	-1.756	.59165	31.994	25.737	.049	1437.2
22.0	-1.756	.59176	32.000	25.741	.051	1437.3
23.0	-1.756	.59194	32.010	25.749	.053	1437.3
24.0	-1.756	.59205	32.016	25.754	.055	1437.3
25.0	-1.756	.59219	32.023	25.760	.058	1437.3
27.5	-1.755	.59240	32.033	25.768	.063	1437.4
30.0	-1.753	.59274	32.050	25.782	.069	1437.5
32.5	-1.750	.59367	32.100	25.822	.074	1437.6
35.0	-1.739	.59509	32.171	25.880	.080	1437.8
37.5	-1.733	.59605	32.220	25.920	.085	1437.9
40.0	-1.696	.59872	32.337	26.014	.090	1438.3
42.5	-1.680	.60004	32.397	26.062	.095	1438.5
45.0	-1.659	.60181	32.477	26.126	.099	1438.8
47.5	-1.668	.60261	32.533	26.172	.104	1438.8
50.0	-1.675	.60333	32.582	26.212	.109	1438.9
55.0	-1.660	.60506	32.664	26.279	.117	1439.2
60.0	-1.650	.60593	32.702	26.309	.126	1439.4
65.0	-1.640	.60687	32.745	26.344	.134	1439.6
70.0	-1.627	.60805	32.796	26.385	.143	1439.8
75.0	-1.616	.60886	32.829	26.412	.151	1440.0
80.0	-1.601	.60979	32.865	26.440	.159	1440.2
85.0	-1.585	.61087	32.909	26.476	.166	1440.4
90.0	-1.553	.61251	32.967	26.522	.174	1440.7
95.0	-1.527	.61371	33.006	26.553	.181	1441.0
100.0	-1.494	.61519	33.054	26.592	.189	1441.3
105.0	-1.454	.61706	33.117	26.641	.196	1441.6
110.0	-1.334	.62191	33.267	26.759	.202	1442.5
115.0	-1.222	.62652	33.410	26.872	.208	1443.3

SITE C4   EXPERIMENT 4121

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.157	.62863	33.458	26.909	.214	1443.7
125.0	-1.066	.63226	33.566	26.994	.219	1444.4
130.0	-1.043	.63331	33.599	27.019	.225	1444.6
135.0	-.952	.63708	33.713	27.109	.230	1445.3
139.6	-.932	.63804	33.745	27.133	.234	1445.5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35
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DATE 25/03/82 GMT 2025
STN C4
TEMPERATURE (CELSIUS)
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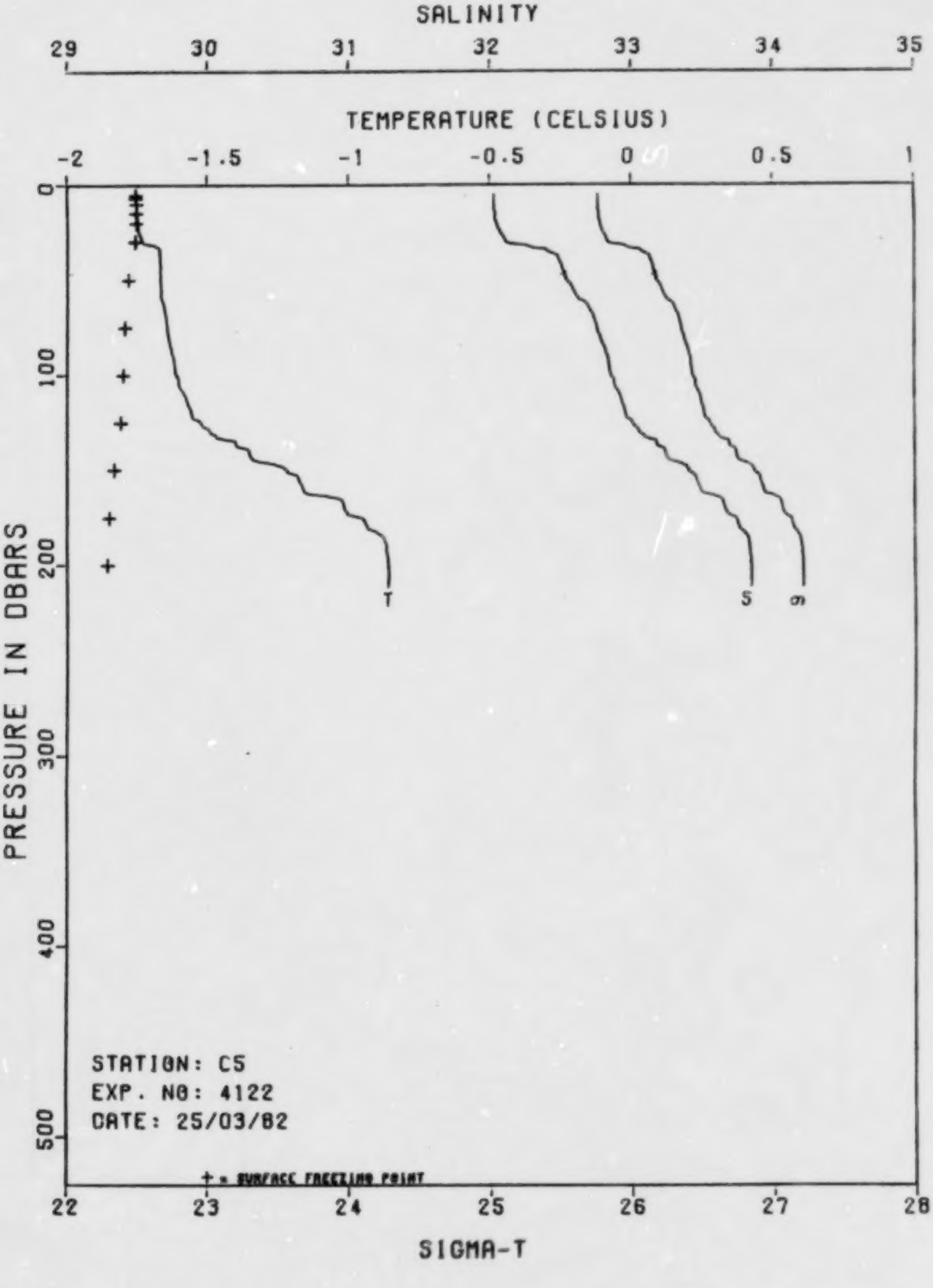
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
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STATION: C5
EXP. NO: 4122
DATE: 25/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE C5 EXPERIMENT 4122

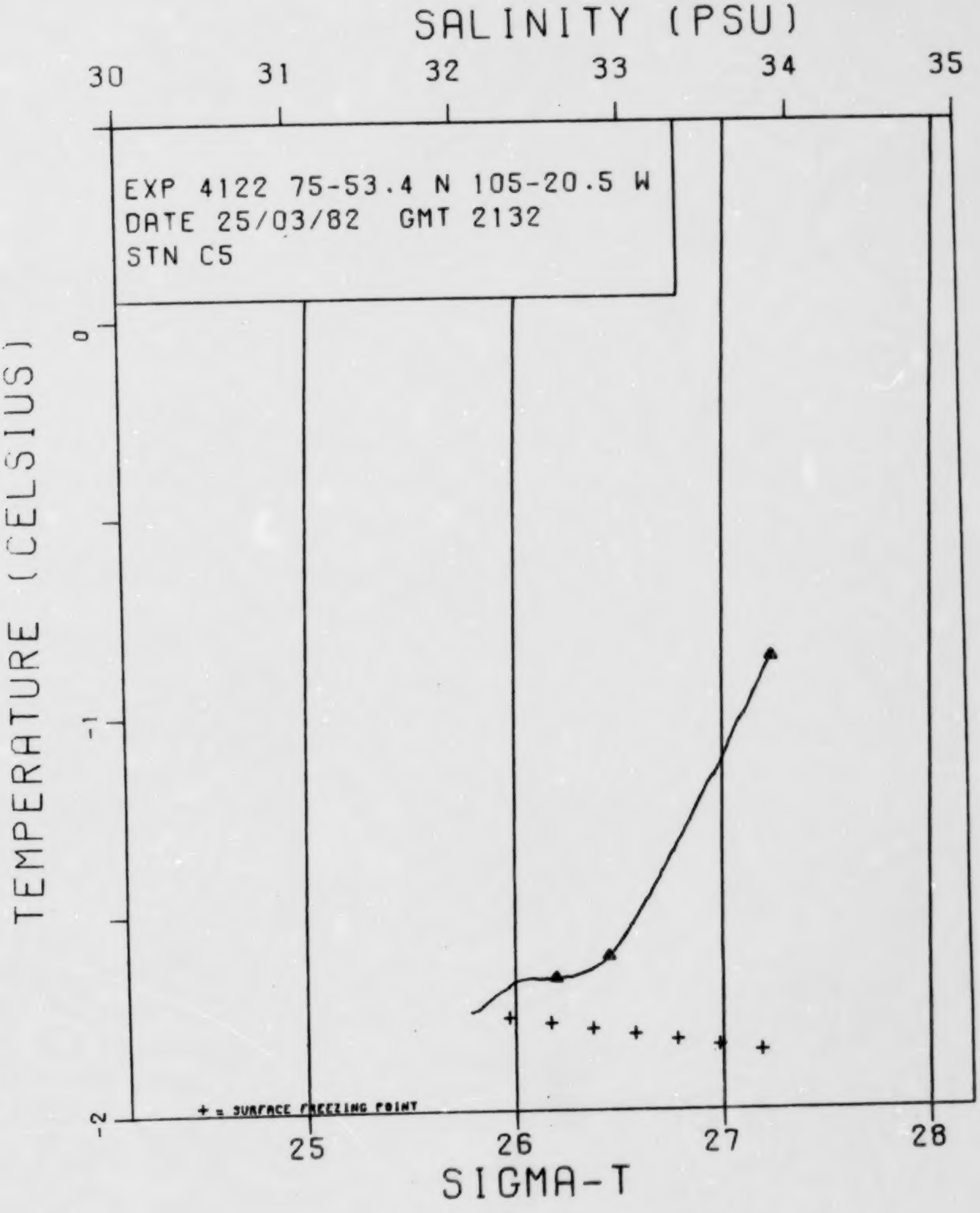
LAT.N. 75-53-24 LON.W. 105-20-30 DATE 25/ 3/82 G.M.T. 2132

ICE THICKNESS 1.9 M WATER DEPTH 215 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.751	.59220	32.030	25.766	.011	1437.1
6.0	-1.751	.59220	32.030	25.766	.013	1437.1
7.0	-1.751	.59218	32.028	25.764	.016	1437.1
8.0	-1.750	.59218	32.027	25.763	.018	1437.1
9.0	-1.751	.59219	32.028	25.764	.020	1437.1
10.0	-1.750	.59220	32.028	25.763	.022	1437.1
11.0	-1.750	.59219	32.026	25.762	.024	1437.1
12.0	-1.750	.59225	32.028	25.764	.027	1437.2
13.0	-1.749	.59219	32.024	25.760	.029	1437.2
14.0	-1.751	.59232	32.033	25.768	.031	1437.2
15.0	-1.750	.59237	32.034	25.768	.033	1437.2
16.0	-1.750	.59239	32.034	25.769	.036	1437.2
17.0	-1.749	.59239	32.033	25.767	.038	1437.3
18.0	-1.749	.59243	32.035	25.769	.040	1437.3
19.0	-1.749	.59246	32.036	25.770	.042	1437.3
20.0	-1.747	.59263	32.044	25.776	.044	1437.3
21.0	-1.747	.59275	32.049	25.781	.047	1437.4
22.0	-1.746	.59277	32.049	25.781	.049	1437.4
23.0	-1.748	.59279	32.052	25.783	.051	1437.4
24.0	-1.746	.59301	32.062	25.791	.053	1437.4
25.0	-1.744	.59322	32.072	25.799	.055	1437.5
27.5	-1.736	.59379	32.095	25.818	.061	1437.6
30.0	-1.730	.59419	32.111	25.831	.066	1437.7
32.5	-1.680	.59783	32.272	25.960	.071	1438.2
35.0	-1.667	.60033	32.404	26.068	.076	1438.5
37.5	-1.668	.60154	32.475	26.125	.081	1438.6
40.0	-1.666	.60182	32.491	26.138	.086	1438.7
42.5	-1.667	.60212	32.505	26.150	.090	1438.7
45.0	-1.668	.60226	32.513	26.156	.095	1438.8
47.5	-1.666	.60237	32.517	26.159	.100	1438.8
50.0	-1.668	.60271	32.537	26.176	.104	1438.9
55.0	-1.665	.60364	32.586	26.215	.113	1439.1
60.0	-1.663	.60437	32.625	26.247	.122	1439.2
65.0	-1.653	.60587	32.699	26.307	.131	1439.4
70.0	-1.647	.60663	32.735	26.336	.139	1439.6
75.0	-1.641	.60715	32.755	26.352	.147	1439.7
80.0	-1.638	.60764	32.778	26.371	.156	1439.9
85.0	-1.631	.60829	32.806	26.393	.164	1440.0
90.0	-1.621	.60897	32.832	26.414	.172	1440.2
95.0	-1.616	.60923	32.839	26.420	.180	1440.3
100.0	-1.611	.60955	32.850	26.428	.188	1440.4
105.0	-1.601	.61033	32.881	26.453	.196	1440.6
110.0	-1.583	.61128	32.914	26.480	.203	1440.8
115.0	-1.569	.61193	32.935	26.497	.211	1441.0

SITE C5 EXPERIMENT 4122

PRESSURE (UBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.555	.61265	32.958	26.515	.219	1441.2
125.0	-1.523	.61407	33.005	26.552	.226	1441.5
130.0	-1.489	.61566	33.057	26.594	.233	1441.8
135.0	-1.398	.61946	33.178	26.689	.240	1442.5
140.0	-1.351	.62147	33.241	26.739	.247	1442.9
145.0	-1.329	.62240	33.269	26.761	.253	1443.1
150.0	-1.217	.62690	33.405	26.866	.259	1443.9
155.0	-1.175	.62875	33.463	26.914	.265	1444.2
160.0	-1.159	.62953	33.488	26.933	.270	1444.4
165.0	-1.035	.63431	33.627	27.042	.276	1445.3
170.0	-1.014	.63531	33.658	27.066	.281	1445.5
175.0	-.956	.63772	33.730	27.123	.285	1446.0
180.0	-.932	.63873	33.759	27.145	.290	1446.2
185.0	-.879	.64082	33.819	27.192	.294	1446.6
190.0	-.867	.64140	33.836	27.205	.299	1446.8
195.0	-.864	.64158	33.840	27.208	.303	1446.9
200.0	-.859	.64180	33.845	27.212	.307	1447.0
210.0	-.860	.64189	33.845	27.212	.315	1447.2
211.5	-.860	.64192	33.845	27.212	.317	1447.2


SALINITY (PSU)
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32
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35
EXP 4122 75-53.4 N 105-20.5 W
DATE 25/03/82 GMT 2132
STN C5
TEMPERATURE (CELSIUS)
0
-1
-2
+ = SURFACE FREEZING POINT
25
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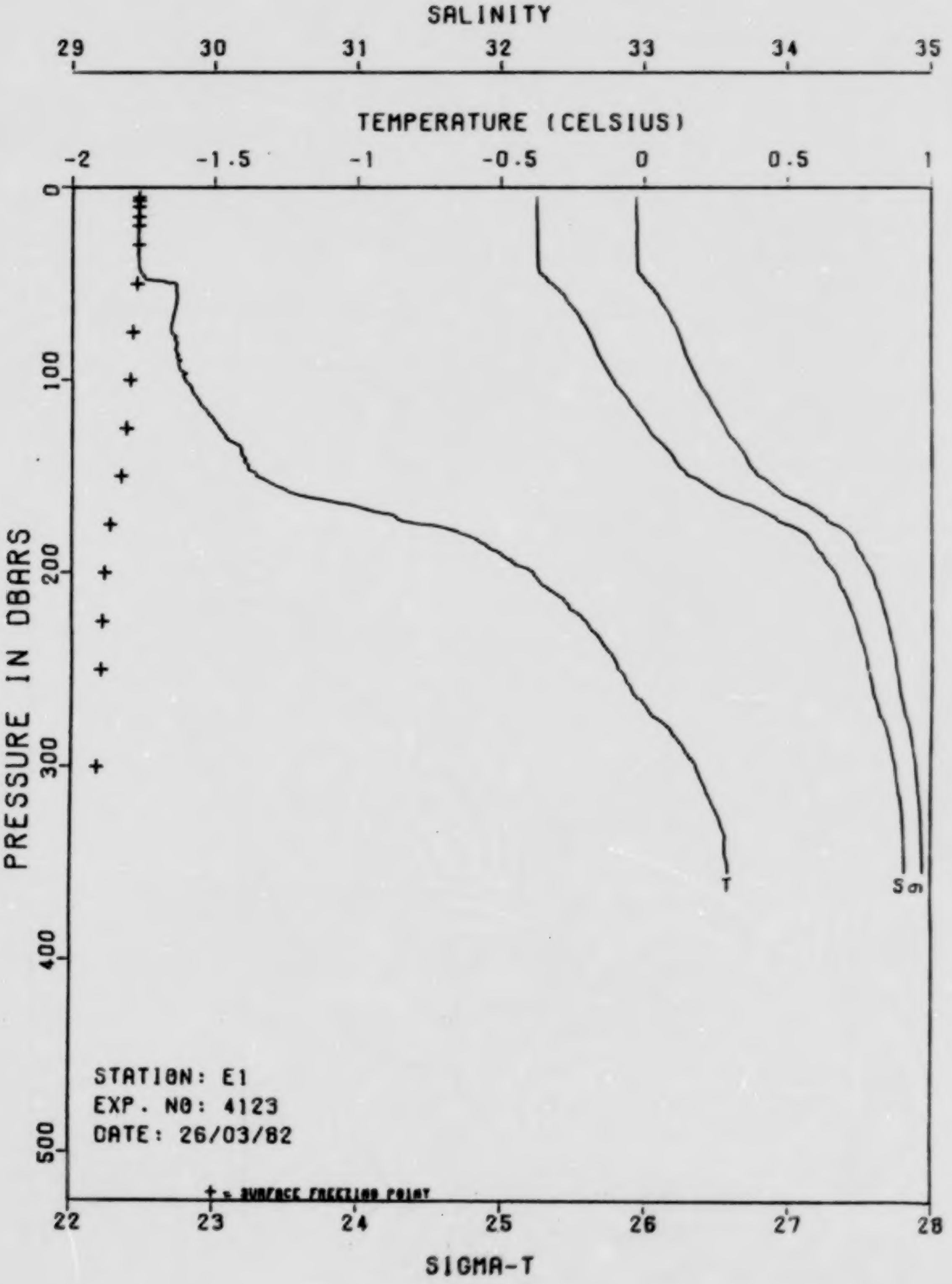
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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-1.5
-1
-0.5
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PRESSURE IN DBARS
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STATION: E1
EXP. NO: 4123
DATE: 26/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE E1 EXPERIMENT 4123

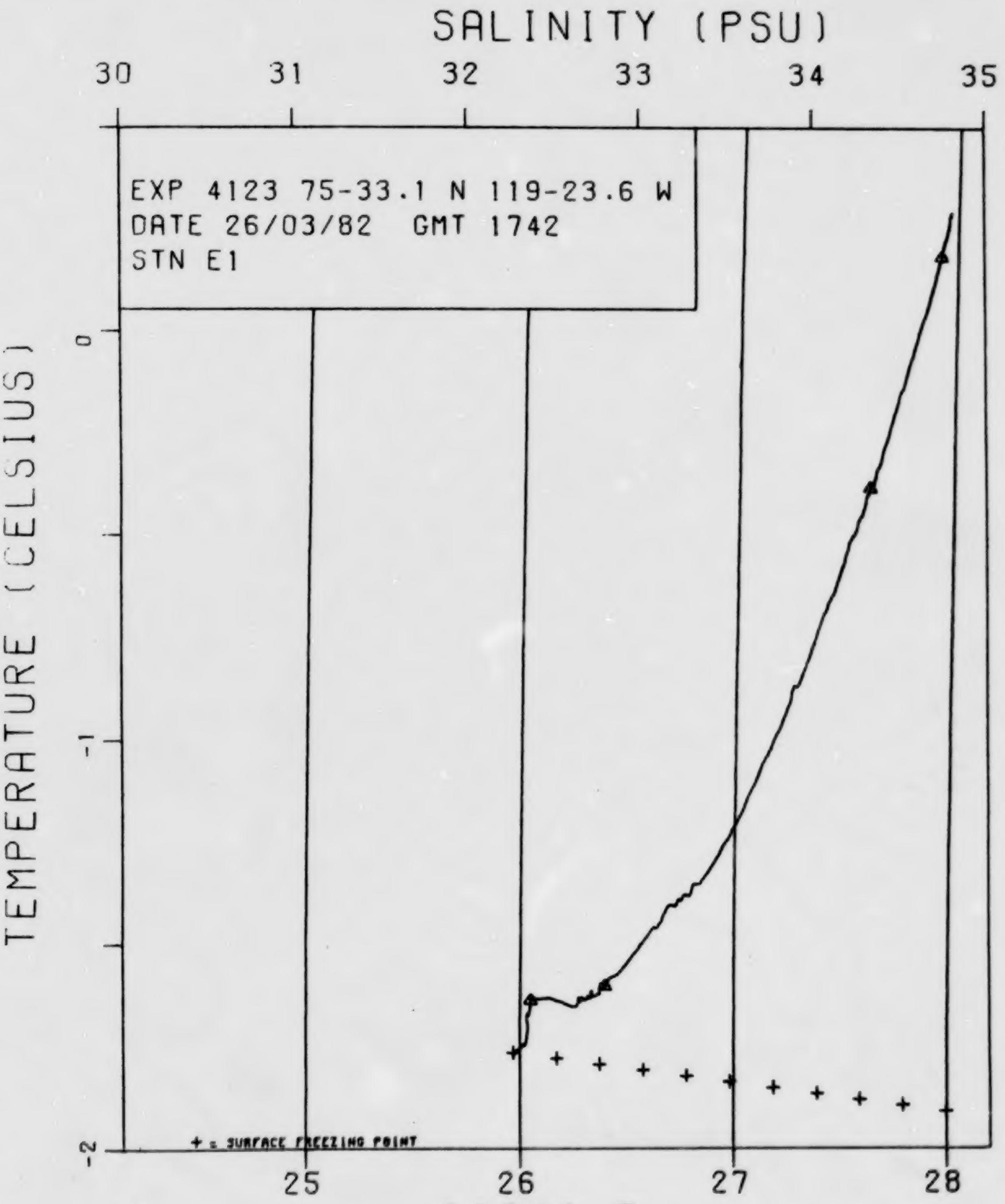
LAT.N. 75-33- 5 LON.W. 119-23-35 DATE 26/ 3/82 G.M.T. 1742

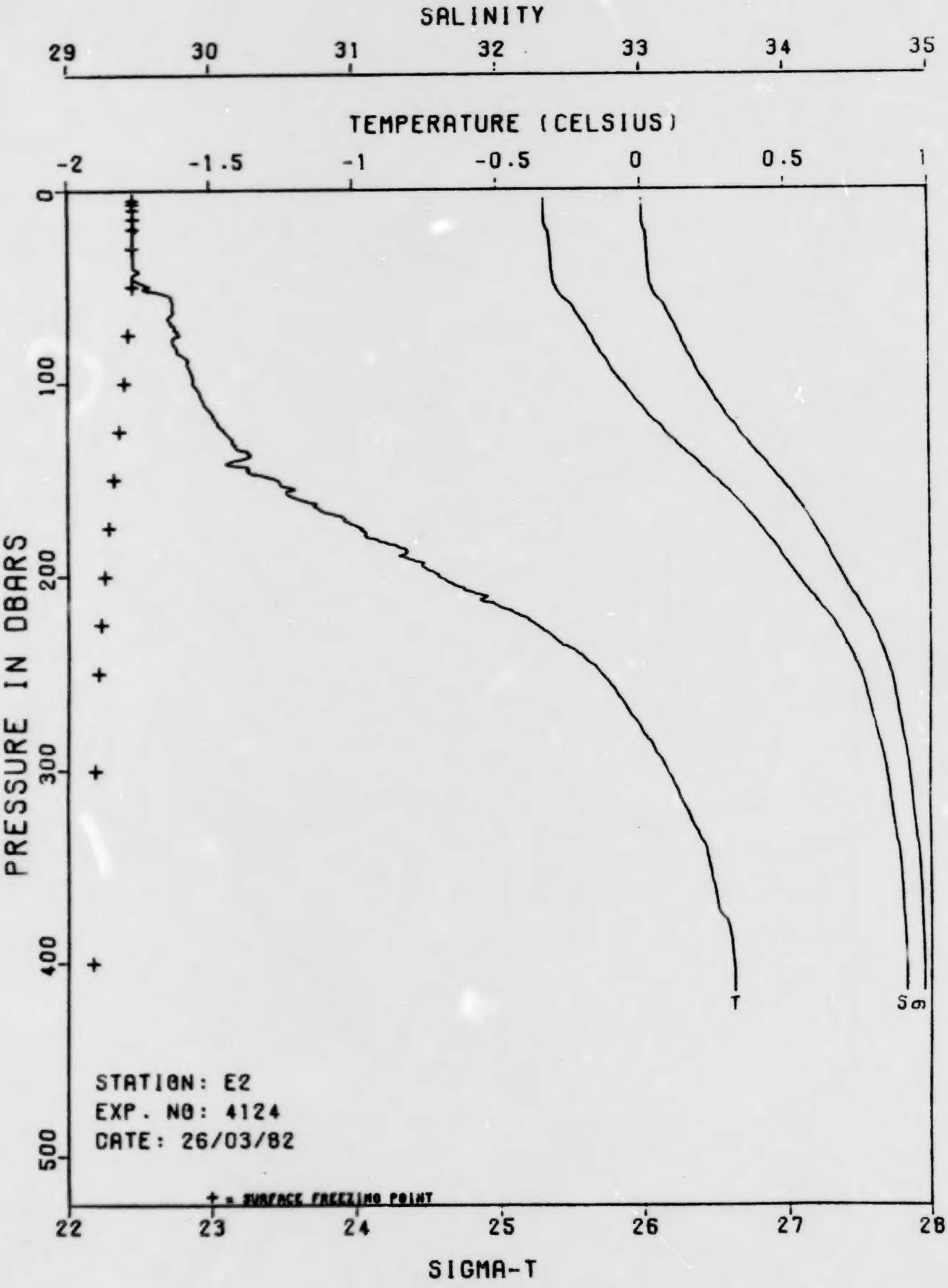
ICE THICKNESS 1.8 M WATER DEPTH 346 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.0	-1.770	.59549	32.247	25.942	.010	1437.3
6.0	-1.770	.59550	32.247	25.942	.012	1437.3
7.0	-1.769	.59550	32.246	25.941	.014	1437.3
8.0	-1.769	.59552	32.246	25.941	.016	1437.3
9.0	-1.770	.59553	32.247	25.942	.018	1437.3
10.0	-1.769	.59555	32.247	25.942	.021	1437.4
11.0	-1.769	.59556	32.247	25.942	.023	1437.4
12.0	-1.770	.59556	32.247	25.942	.025	1437.4
13.0	-1.770	.59558	32.247	25.942	.027	1437.4
14.0	-1.770	.59559	32.247	25.942	.029	1437.4
15.0	-1.769	.59560	32.247	25.942	.031	1437.4
16.0	-1.769	.59562	32.248	25.942	.033	1437.5
17.0	-1.770	.59564	32.248	25.943	.035	1437.5
18.0	-1.770	.59570	32.251	25.946	.037	1437.5
19.0	-1.770	.59573	32.253	25.947	.039	1437.5
20.0	-1.770	.59575	32.253	25.947	.041	1437.5
21.0	-1.769	.59577	32.253	25.947	.043	1437.5
22.0	-1.769	.59578	32.253	25.947	.045	1437.6
23.0	-1.770	.59580	32.254	25.948	.047	1437.6
24.0	-1.770	.59581	32.254	25.948	.049	1437.6
25.0	-1.769	.59583	32.254	25.948	.051	1437.6
27.5	-1.769	.59586	32.254	25.948	.056	1437.7
30.0	-1.769	.59590	32.255	25.949	.061	1437.7
32.5	-1.769	.59596	32.257	25.950	.067	1437.7
35.0	-1.768	.59600	32.257	25.950	.072	1437.8
37.5	-1.766	.59609	32.259	25.952	.077	1437.8
40.0	-1.767	.59612	32.260	25.952	.082	1437.9
42.5	-1.765	.59624	32.263	25.955	.087	1437.9
45.0	-1.756	.59672	32.281	25.969	.092	1438.0
47.5	-1.745	.59762	32.320	26.001	.097	1438.2
50.0	-1.636	.60024	32.356	26.028	.102	1438.8
55.0	-1.634	.60151	32.426	26.084	.112	1439.0
60.0	-1.635	.60230	32.471	26.121	.121	1439.1
65.0	-1.642	.60322	32.530	26.169	.130	1439.3
70.0	-1.650	.60371	32.565	26.198	.139	1439.3
75.0	-1.652	.60452	32.612	26.236	.148	1439.5
80.0	-1.635	.60540	32.643	26.261	.157	1439.7
85.0	-1.637	.60591	32.671	26.284	.166	1439.8
90.0	-1.613	.60692	32.702	26.308	.174	1440.0
95.0	-1.621	.60753	32.744	26.342	.183	1440.1
100.0	-1.603	.60859	32.784	26.374	.191	1440.4
105.0	-1.579	.60985	32.829	26.410	.199	1440.6
110.0	-1.559	.61123	32.885	26.456	.207	1440.9
115.0	-1.533	.61257	32.933	26.494	.215	1441.2

SITE E1 EXPERIMENT 4123

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.504	.61405	32.985	26.535	.222	1441.5
125.0	-1.481	.61522	33.026	26.568	.229	1441.7
130.0	-1.462	.61648	33.076	26.606	.237	1441.9
135.0	-1.408	.61880	33.150	26.666	.244	1442.4
140.0	-1.398	.61994	33.203	26.710	.250	1442.6
145.0	-1.379	.62107	33.246	26.744	.257	1442.8
150.0	-1.356	.62279	33.318	26.802	.263	1443.1
155.0	-1.283	.62637	33.444	26.902	.269	1443.7
160.0	-1.194	.63004	33.558	26.991	.274	1444.4
165.0	-1.013	.63691	33.754	27.144	.279	1445.6
170.0	-.875	.64177	33.879	27.240	.283	1446.5
175.0	-.755	.64637	34.008	27.340	.287	1447.3
180.0	-.627	.65096	34.127	27.431	.291	1448.1
185.0	-.554	.65336	34.181	27.471	.294	1448.6
190.0	-.501	.65535	34.232	27.511	.297	1449.0
195.0	-.456	.65711	34.280	27.547	.299	1449.4
200.0	-.385	.65943	34.330	27.584	.302	1449.9
210.0	-.315	.66202	34.394	27.633	.307	1450.4
220.0	-.243	.66446	34.447	27.672	.311	1451.0
230.0	-.180	.66661	34.492	27.705	.315	1451.5
240.0	-.126	.66852	34.534	27.737	.318	1452.0
250.0	-.087	.66988	34.562	27.757	.322	1452.4
260.0	-.044	.67139	34.593	27.780	.325	1452.8
270.0	.012	.67332	34.634	27.810	.328	1453.3
280.0	.091	.67605	34.693	27.854	.330	1453.9
290.0	.141	.67768	34.723	27.875	.333	1454.3
300.0	.183	.67912	34.751	27.896	.335	1454.7
310.0	.211	.68008	34.767	27.907	.337	1455.0
320.0	.243	.68120	34.769	27.922	.339	1455.4
330.0	.269	.68206	34.802	27.931	.340	1455.7
340.0	.281	.68249	34.807	27.935	.342	1455.9
350.0	.292	.68290	34.812	27.938	.344	1456.1
354.4	.292	.68300	34.814	27.940	.344	1456.2


SALINITY (PSU)
30
31
32
33
34
35
EXP 4123 75-33.1 N 119-23.6 W
DATE 26/03/82 GMT 1742
STN E1
TEMPERATURE (CELSIUS)
0
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
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-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
300
400
500
T
S
σ
STATION: E2
EXP. NO: 4124
DATE: 26/03/82
+ = SURFACE FREEZING POINT
22
23
24
25
26
27
28
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE E2 EXPERIMENT 4124

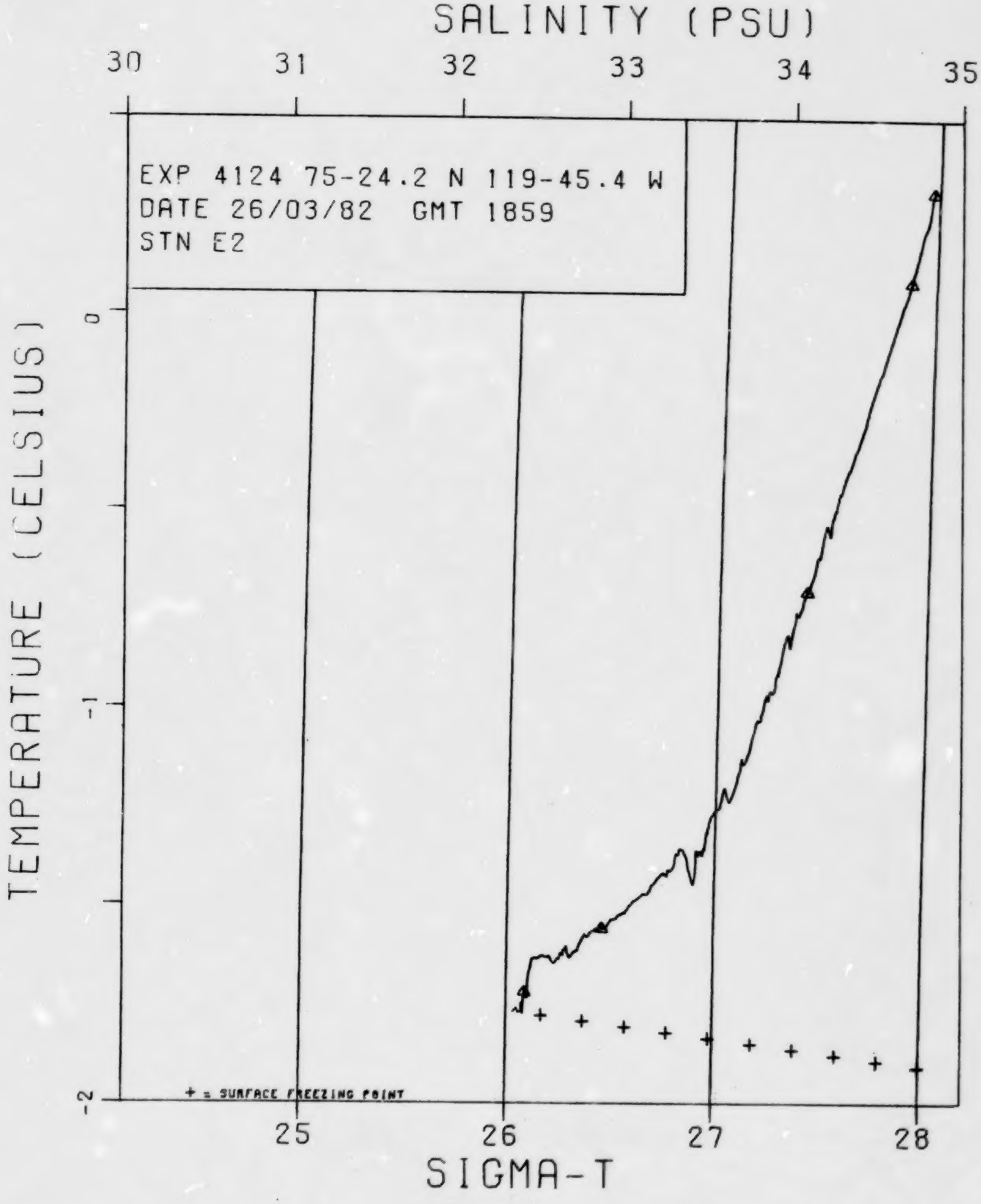
LAT.N. 75-24-12 LON.W. 119-45-24 DATE 26/ 3/82 G.M.T. 1859

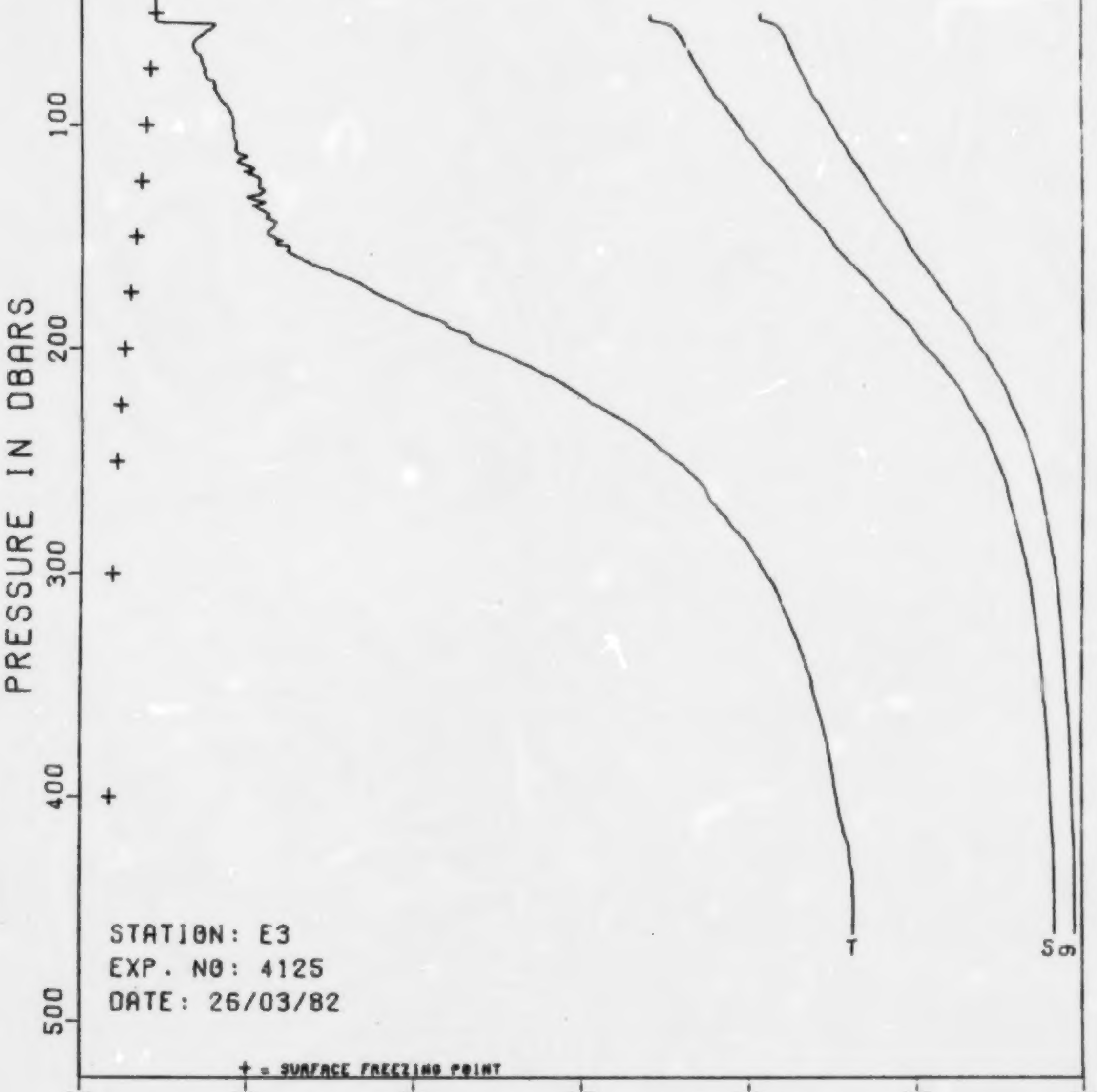
ICE THICKNESS 1.3 M WATER DEPTH 415 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.9	-1.769	.59685	32.327	26.007	.010	1437.4
5.0	-1.770	.59686	32.328	26.008	.010	1437.4
6.0	-1.770	.59687	32.328	26.008	.012	1437.4
7.0	-1.769	.59688	32.328	26.008	.014	1437.4
8.0	-1.770	.59689	32.328	26.008	.016	1437.4
9.0	-1.769	.59688	32.327	26.007	.018	1437.4
10.0	-1.770	.59690	32.328	26.008	.020	1437.5
11.0	-1.769	.59690	32.326	26.007	.022	1437.5
12.0	-1.769	.59693	32.328	26.008	.024	1437.5
13.0	-1.769	.59693	32.328	26.008	.026	1437.5
14.0	-1.769	.59694	32.327	26.007	.028	1437.5
15.0	-1.770	.59696	32.329	26.009	.030	1437.5
16.0	-1.769	.59698	32.329	26.008	.032	1437.6
17.0	-1.769	.59698	32.328	26.008	.034	1437.6
18.0	-1.770	.59700	32.329	26.008	.036	1437.6
19.0	-1.767	.59714	32.333	26.012	.038	1437.6
20.0	-1.766	.59728	32.340	26.018	.040	1437.7
21.0	-1.762	.59746	32.346	26.022	.042	1437.7
22.0	-1.771	.59751	32.358	26.032	.044	1437.7
23.0	-1.773	.59753	32.361	26.035	.046	1437.7
24.0	-1.772	.59757	32.362	26.035	.048	1437.7
25.0	-1.773	.59759	32.363	26.037	.050	1437.7
27.5	-1.771	.59766	32.363	26.037	.055	1437.8
30.0	-1.770	.59776	32.367	26.040	.059	1437.8
32.5	-1.769	.59786	32.370	26.042	.064	1437.9
35.0	-1.770	.59791	32.373	26.044	.069	1437.9
37.5	-1.770	.59798	32.375	26.046	.074	1438.0
40.0	-1.770	.59801	32.376	26.046	.079	1438.0
42.5	-1.749	.59848	32.379	26.049	.084	1438.2
45.0	-1.773	.59816	32.367	26.056	.089	1438.1
47.5	-1.750	.59868	32.390	26.057	.093	1438.3
50.0	-1.712	.59954	32.397	26.063	.098	1438.5
55.0	-1.637	.60171	32.441	26.097	.108	1439.0
60.0	-1.632	.60319	32.521	26.161	.117	1439.2
65.0	-1.638	.60371	32.554	26.189	.126	1439.3
70.0	-1.638	.60460	32.604	26.229	.135	1439.5
75.0	-1.607	.60589	32.644	26.261	.144	1439.7
80.0	-1.628	.60605	32.673	26.285	.153	1439.8
85.0	-1.610	.60721	32.719	26.322	.161	1440.0
90.0	-1.581	.60864	32.769	26.362	.170	1440.3
95.0	-1.566	.60964	32.808	26.393	.178	1440.5
100.0	-1.560	.61072	32.863	26.438	.186	1440.7
105.0	-1.536	.61220	32.920	26.484	.193	1441.0
110.0	-1.523	.61327	32.967	26.521	.201	1441.2

SITE E2 EXPERIMENT 4124

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.499	.61483	33.029	26.571	.206	1441.5
120.0	-1.477	.61633	33.090	26.620	.215	1441.7
125.0	-1.450	.61806	33.160	26.676	.222	1442.0
130.0	-1.420	.61979	33.225	26.728	.229	1442.3
135.0	-1.398	.62137	33.290	26.780	.235	1442.6
140.0	-1.397	.62279	33.370	26.845	.241	1442.8
145.0	-1.365	.62466	33.442	26.903	.247	1443.2
150.0	-1.271	.62771	33.512	26.957	.253	1443.8
155.0	-1.204	.63024	33.583	27.012	.258	1444.3
160.0	-1.195	.63164	33.652	27.068	.263	1444.5
165.0	-1.126	.63407	33.717	27.118	.268	1445.0
170.0	-1.035	.63688	33.774	27.161	.272	1445.6
175.0	-.977	.63896	33.827	27.202	.277	1446.0
180.0	-.956	.64035	33.881	27.245	.281	1446.3
185.0	-.844	.64351	33.937	27.286	.285	1446.9
190.0	-.835	.64445	33.978	27.319	.288	1447.1
195.0	-.764	.64675	34.029	27.357	.292	1447.6
200.0	-.706	.64877	34.078	27.394	.295	1448.0
210.0	-.559	.65348	34.177	27.469	.302	1449.0
220.0	-.431	.65806	34.291	27.555	.307	1449.9
230.0	-.325	.66187	34.384	27.625	.312	1450.7
240.0	-.226	.66510	34.452	27.675	.316	1451.4
250.0	-.148	.66787	34.515	27.723	.320	1452.0
260.0	-.093	.66976	34.556	27.752	.324	1452.5
270.0	-.048	.67138	34.590	27.778	.327	1452.9
280.0	-.001	.67302	34.625	27.804	.330	1453.4
290.0	.045	.67472	34.664	27.833	.333	1453.8
300.0	.084	.67609	34.691	27.852	.335	1454.2
310.0	.121	.67731	34.713	27.868	.337	1454.5
320.0	.151	.67836	34.733	27.882	.340	1454.9
330.0	.182	.67942	34.752	27.896	.342	1455.2
340.0	.216	.68069	34.777	27.914	.344	1455.6
350.0	.232	.68128	34.789	27.923	.345	1455.8
360.0	.246	.68185	34.798	27.930	.347	1456.0
370.0	.257	.68228	34.804	27.934	.349	1456.3
380.0	.292	.68327	34.814	27.940	.350	1456.6
390.0	.306	.68378	34.821	27.945	.352	1456.6
400.0	.314	.68416	34.828	27.950	.353	1457.0
415.6	.316	.68437	34.829	27.951	.356	1457.3


SALINITY (PSU)
30
31
32
33
34
35
EXP 4124 75-24.2 N 119-45.4 W
DATE 26/03/82 GMT 1859
STN E2
TEMPERATURE (CELSIUS)
0
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
300
400
500
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STATION: E3
EXP. NO: 4125
DATE: 26/03/82
+ = SURFACE FREEZING POINT
22
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26
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28
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE E3 EXPERIMENT 4125

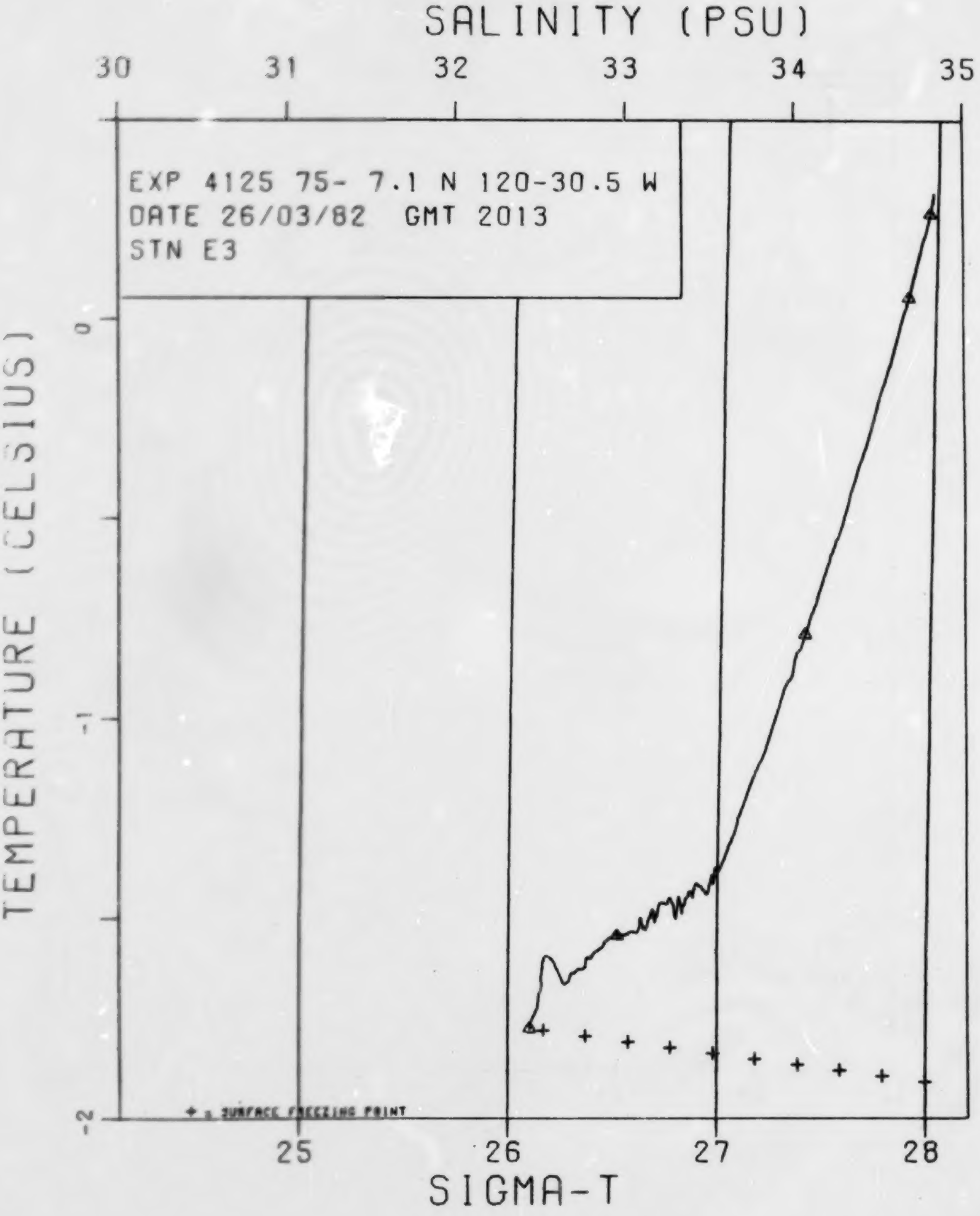
LAT.N. 75- 7- 6 LON.W. 120-30-30 DATE 26/ 3/82 G.M.T. 2013

ICE THICKNESS 1.9 M WATER DEPTH 461 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.777					
6.0	-1.778					
7.0	-1.778					
8.0	-1.777					
9.0	-1.777					
10.0	-1.777					
11.0	-1.778					
12.0	-1.777					
13.0	-1.778					
14.0	-1.778					
15.0	-1.778					
16.0	-1.777					
17.0	-1.777					
18.0	-1.776					
19.0	-1.777					
20.0	-1.777					
21.0	-1.777					
22.0	-1.777					
23.0	-1.777					
24.0	-1.777					
25.0	-1.778					
27.5	-1.777					
30.0	-1.776					
32.5	-1.777					
35.0	-1.776					
37.5	-1.776					
40.0	-1.777					
42.5	-1.776					
45.0	-1.776					
47.5	-1.777					
50.0	-1.775	.59868	32.415	26.079	.095	1438.2
55.0	-1.612	.60304	32.492	26.138	.105	1439.2
60.0	-1.635	.60426	32.587	26.215	.114	1439.3
65.0	-1.666	.60442	32.627	26.249	.122	1439.3
70.0	-1.639	.60559	32.663	26.277	.131	1439.5
75.0	-1.628	.60649	32.702	26.309	.140	1439.7
80.0	-1.613	.60756	32.746	26.344	.148	1439.9
85.0	-1.597	.60859	32.786	26.376	.156	1440.2
90.0	-1.574	.60994	32.838	26.418	.164	1440.4
95.0	-1.546	.61132	32.868	26.457	.172	1440.7
100.0	-1.542	.61228	32.935	26.495	.180	1440.9
105.0	-1.540	.61315	32.981	26.533	.187	1441.0
110.0	-1.536	.61426	33.039	26.580	.195	1441.2
115.0	-1.511	.61551	33.083	26.615	.202	1441.5

SITE E3   EXPERIMENT #1[illegible]

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMA T (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.477	.61724	33.146	26.666	.209	1441.8
125.0	-1.461	.61858	33.202	26.711	.215	1442.0
130.0	-1.448	.61970	33.251	26.756	.222	1442.2
135.0	-1.445	.62069	33.302	26.792	.228	1442.4
140.0	-1.431	.62204	33.364	26.841	.234	1442.7
145.0	-1.420	.62334	33.426	26.891	.240	1442.9
150.0	-1.432	.62468	33.479	26.935	.246	1443.0
155.0	-1.370	.62599	33.520	26.966	.251	1443.4
160.0	-1.336	.62771	33.580	27.013	.256	1443.7
165.0	-1.259	.63040	33.649	27.067	.261	1444.3
170.0	-1.176	.63321	33.717	27.119	.266	1444.9
175.0	-1.122	.63514	33.767	27.158	.271	1445.2
180.0	-1.049	.63779	33.836	27.212	.275	1445.8
185.0	-.979	.64010	33.889	27.252	.279	1446.3
190.0	-.903	.64285	33.960	27.307	.283	1446.8
195.0	-.833	.64503	34.006	27.341	.287	1447.3
200.0	-.785	.64686	34.056	27.380	.290	1447.8
210.0	-.637	.65191	34.175	27.470	.296	1448.7
220.0	-.516	.65611	34.275	27.546	.302	1449.5
230.0	-.404	.65973	34.351	27.602	.307	1450.4
240.0	-.301	.66326	34.431	27.662	.311	1451.1
250.0	-.219	.66595	34.486	27.705	.315	1451.7
260.0	-.143	.66857	34.544	27.745	.319	1452.3
270.0	-.094	.67021	34.576	27.769	.322	1452.7
280.0	-.043	.67192	34.617	27.793	.325	1453.1
290.0	.013	.67377	34.646	27.820	.328	1453.6
300.0	.055	.67525	34.676	27.842	.331	1454.0
310.0	.095	.67656	34.700	27.859	.333	1454.4
320.0	.119	.67745	34.717	27.871	.335	1454.7
330.0	.149	.67846	34.734	27.884	.338	1455.0
340.0	.172	.67927	34.748	27.894	.340	1455.3
350.0	.191	.67998	34.761	27.903	.342	1455.6
360.0	.209	.68071	34.776	27.914	.344	1455.8
370.0	.226	.68140	34.788	27.923	.345	1456.1
380.0	.242	.68195	34.797	27.929	.347	1456.3
390.0	.254	.68242	34.804	27.934	.349	1456.6
400.0	.265	.68284	34.809	27.937	.350	1456.8
425.0	.303	.68421	34.828	27.951	.354	1457.4
450.0	.315	.68476	34.831	27.953	.358	1457.9
461.0	.314	.68485	34.831	27.953	.360	1458.1


SALINITY (PSU)
30
31
32
33
34
35
EXP 4125 75- 7.1 N 120-30.5 W
DATE 26/03/82 GMT 2013
STN E3
TEMPERATURE (CELSIUS)
0
-1
-2
+ = SURFACE FREEZING POINT
25
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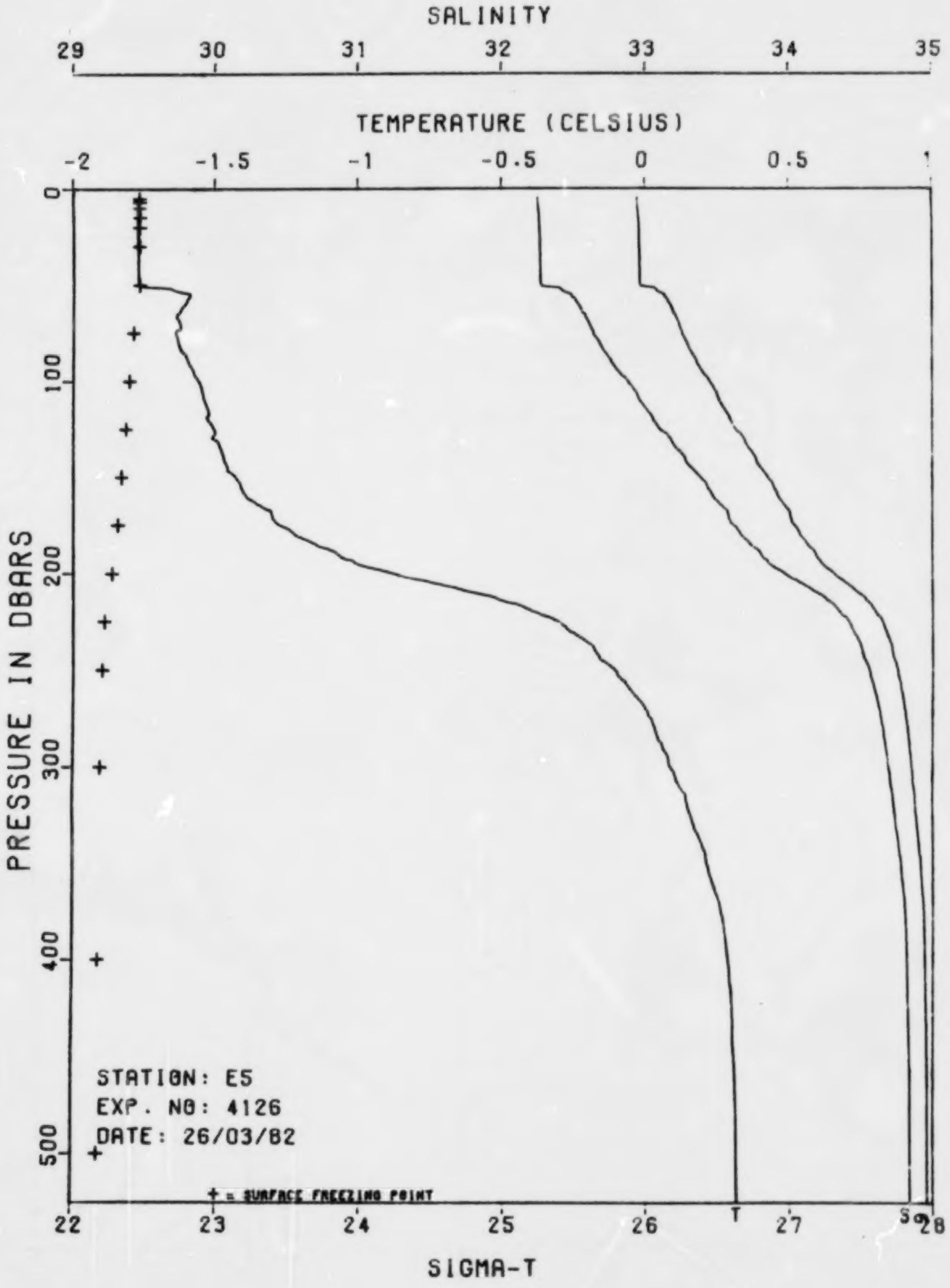
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
300
400
500
STATION: E5
EXP. NO: 4126
DATE: 26/03/82
+ = SURFACE FREEZING POINT
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28
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE E5 EXPERIMENT 4126

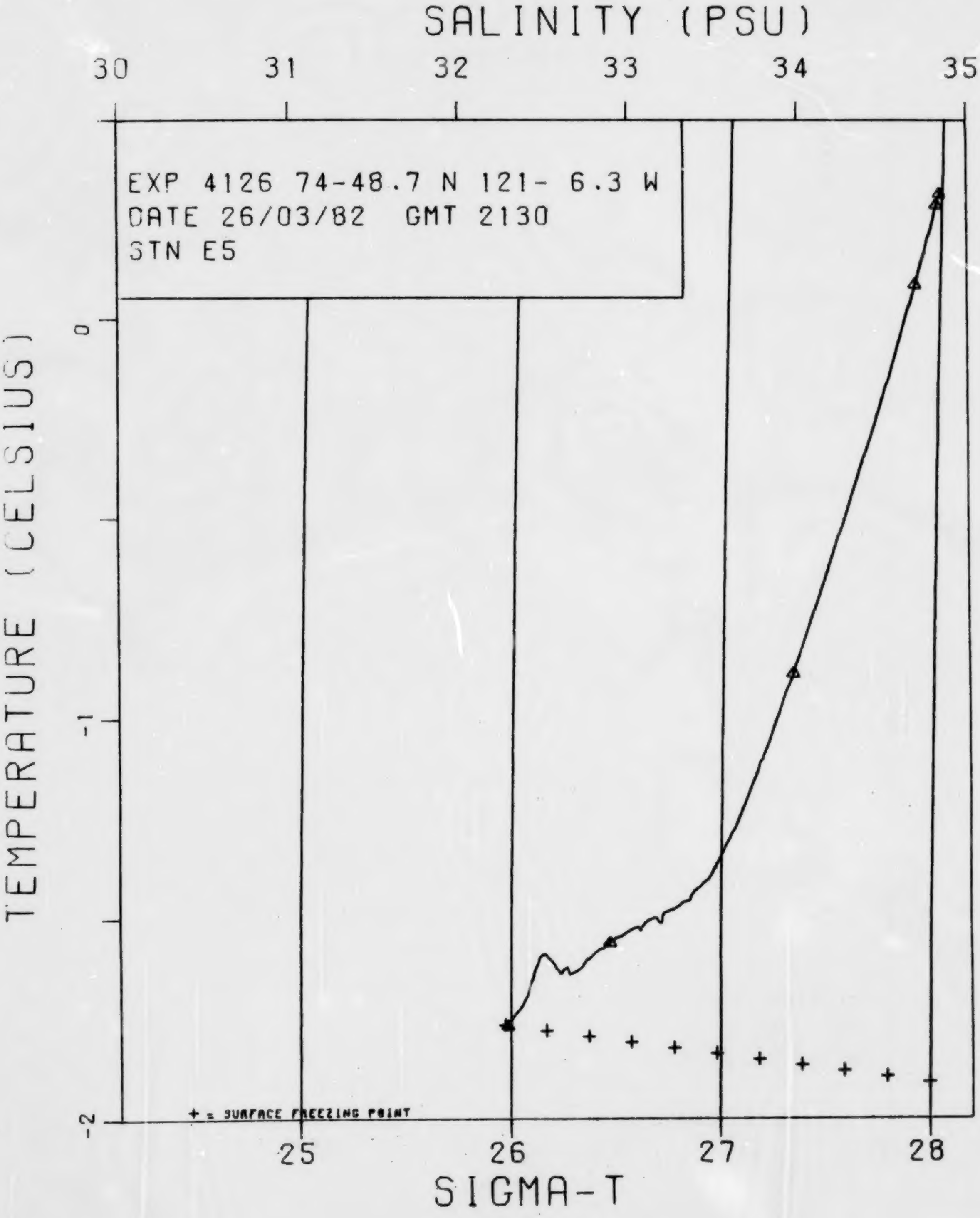
LAT.N. 74-48-41 LON.W. 121- 6-18 DATE 26/ 3/82 G.M.T. 2130

ICE THICKNESS 1.6 M WATER DEPTH 525 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.9	-1.774	.59548	32.251	25.945	.010	1437.3
5.0	-1.773	.59549	32.251	25.945	.010	1437.3
6.0	-1.773	.59550	32.251	25.945	.012	1437.3
7.0	-1.773	.59552	32.251	25.945	.014	1437.3
8.0	-1.772	.59556	32.253	25.947	.016	1437.3
9.0	-1.772	.59560	32.253	25.947	.018	1437.3
10.0	-1.772	.59563	32.255	25.948	.020	1437.3
11.0	-1.772	.59565	32.255	25.948	.023	1437.4
12.0	-1.773	.59568	32.257	25.950	.025	1437.4
13.0	-1.772	.59570	32.257	25.950	.027	1437.4
14.0	-1.773	.59572	32.259	25.951	.029	1437.4
15.0	-1.773	.59574	32.259	25.952	.031	1437.4
16.0	-1.772	.59578	32.261	25.953	.033	1437.5
17.0	-1.772	.59578	32.260	25.952	.035	1437.5
18.0	-1.773	.59581	32.261	25.954	.037	1437.5
19.0	-1.773	.59582	32.261	25.954	.039	1437.5
20.0	-1.772	.59584	32.261	25.953	.041	1437.5
21.0	-1.773	.59586	32.262	25.954	.043	1437.5
22.0	-1.772	.59587	32.262	25.954	.045	1437.6
23.0	-1.772	.59586	32.262	25.954	.047	1437.6
24.0	-1.773	.59591	32.264	25.956	.049	1437.6
25.0	-1.773	.59592	32.264	25.956	.051	1437.6
27.5	-1.772	.59596	32.264	25.956	.056	1437.6
30.0	-1.773	.59600	32.265	25.957	.061	1437.7
32.5	-1.772	.59603	32.265	25.956	.066	1437.7
35.0	-1.772	.59607	32.265	25.957	.071	1437.8
37.5	-1.772	.59610	32.265	25.957	.077	1437.8
40.0	-1.772	.59614	32.267	25.958	.082	1437.9
42.5	-1.772	.59616	32.266	25.958	.087	1437.9
45.0	-1.771	.59620	32.267	25.958	.092	1437.9
47.5	-1.771	.59626	32.268	25.959	.097	1438.0
50.0	-1.768	.59636	32.270	25.961	.102	1438.0
55.0	-1.588	.60330	32.482	26.129	.112	1439.3
60.0	-1.607	.60385	32.532	26.170	.121	1439.3
65.0	-1.630	.60411	32.570	26.201	.130	1439.4
70.0	-1.625	.60491	32.609	26.233	.139	1439.5
75.0	-1.640	.60518	32.637	26.256	.148	1439.6
80.0	-1.629	.60616	32.681	26.292	.156	1439.8
85.0	-1.614	.60711	32.718	26.321	.165	1440.0
90.0	-1.596	.60831	32.766	26.360	.173	1440.2
95.0	-1.576	.60953	32.813	26.397	.181	1440.5
100.0	-1.557	.61103	32.877	26.449	.189	1440.7
105.0	-1.548	.61205	32.925	26.488	.197	1440.9
110.0	-1.537	.61291	32.961	26.517	.205	1441.1

SITE E5   EXPERIMENT #126

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.524	.61407	33.012	26.558	.212	1441.3
120.0	-1.526	.61483	33.056	26.594	.219	1441.4
125.0	-1.504	.61606	33.102	26.630	.226	1441.7
130.0	-1.511	.61726	33.177	26.692	.233	1441.8
135.0	-1.482	.61852	33.216	26.723	.240	1442.1
140.0	-1.469	.61981	33.275	26.770	.246	1442.4
145.0	-1.458	.62078	33.316	26.603	.252	1442.5
150.0	-1.429	.62249	33.382	26.856	.258	1442.9
155.0	-1.409	.62378	33.433	26.896	.264	1443.1
160.0	-1.392	.62482	33.471	26.927	.269	1443.3
165.0	-1.340	.62692	33.535	26.977	.275	1443.7
170.0	-1.301	.62848	33.580	27.012	.280	1444.1
175.0	-1.274	.62968	33.616	27.041	.285	1444.3
180.0	-1.220	.63165	33.668	27.081	.290	1444.7
185.0	-1.147	.63426	33.736	27.134	.295	1445.3
190.0	-1.070	.63700	33.808	27.190	.299	1445.8
195.0	-1.001	.63934	33.863	27.232	.303	1446.3
200.0	-.879	.64352	33.967	27.312	.307	1447.1
210.0	-.591	.65313	34.194	27.484	.314	1448.9
220.0	-.387	.66000	34.353	27.603	.319	1450.2
230.0	-.265	.66417	34.449	27.675	.323	1451.1
240.0	-.178	.66710	34.511	27.721	.327	1451.7
250.0	-.107	.66949	34.562	27.758	.331	1452.3
260.0	-.055	.67122	34.595	27.782	.334	1452.7
270.0	-.001	.67300	34.629	27.807	.337	1453.2
280.0	.032	.67427	34.658	27.829	.339	1453.6
290.0	.060	.67523	34.676	27.841	.342	1453.9
300.0	.087	.67617	34.693	27.854	.344	1454.2
310.0	.120	.67729	34.712	27.867	.347	1454.5
320.0	.148	.67826	34.730	27.881	.349	1454.8
330.0	.167	.67899	34.743	27.890	.351	1455.1
340.0	.196	.68001	34.762	27.904	.353	1455.4
350.0	.213	.68070	34.777	27.914	.355	1455.7
360.0	.231	.68139	34.789	27.923	.357	1456.0
370.0	.255	.68220	34.801	27.932	.358	1456.3
380.0	.269	.68274	34.810	27.938	.360	1456.5
390.0	.278	.68310	34.815	27.942	.362	1456.7
400.0	.286	.68345	34.820	27.945	.363	1456.9
425.0	.300	.68415	34.828	27.951	.367	1457.4
450.0	.307	.68467	34.836	27.956	.371	1457.8
475.0	.313	.68515	34.840	27.960	.374	1458.3
500.0	.314	.68542	34.839	27.959	.378	1458.7
525.0	.316	.68572	34.839	27.959	.381	1459.1
525.0	.316	.68571	34.838	27.958	.381	1459.1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DATE 26/03/82 GMT 2130
STN E5
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+ = SURFACE FREEZING POINT
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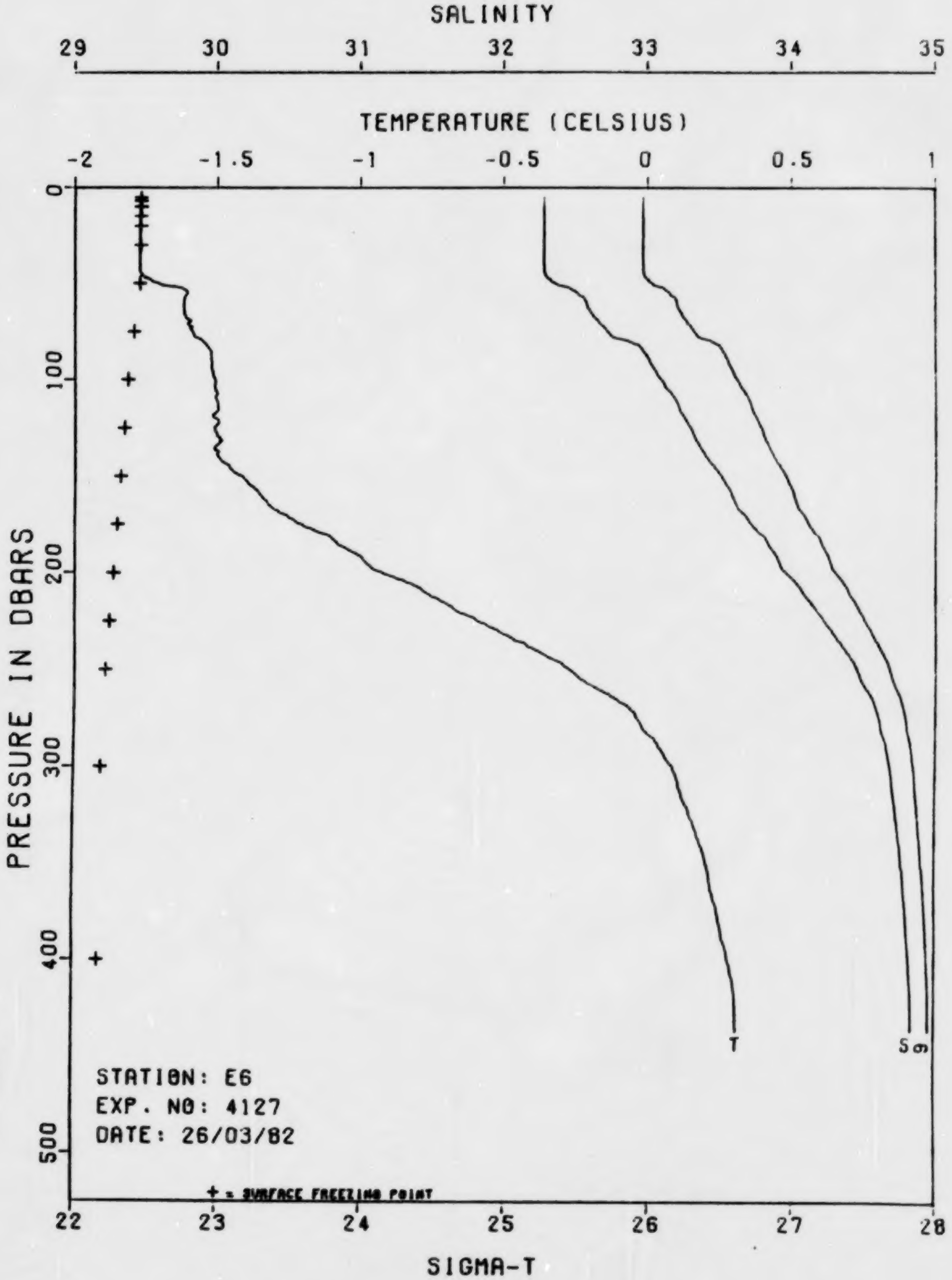
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: E6
EXP. NO: 4127
DATE: 26/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE E6   EXPERIMENT #127

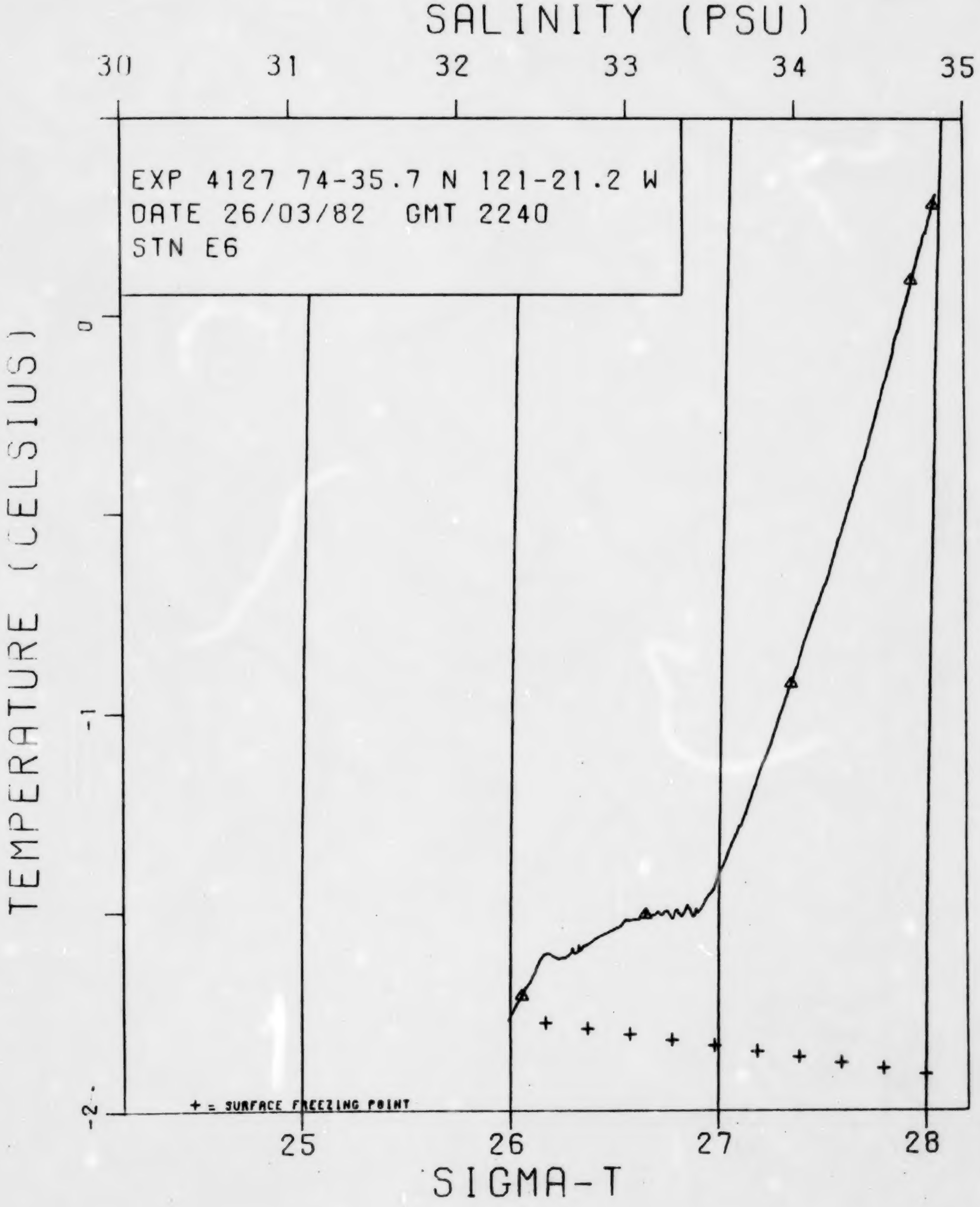
LAT.N. 74-35-41   LON.W. 121-21-12   DATE 26/ 3/82   G.M.T. 2240

ICE THICKNESS   1.7 M   WATER DEPTH   438   M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.1	-1.772	.59598	32.279	25.968	.010	1437.3
6.0	-1.772	.59596	32.278	25.967	.012	1437.3
7.0	-1.772	.59598	32.277	25.967	.014	1437.3
8.0	-1.772	.59598	32.277	25.967	.016	1437.3
9.0	-1.772	.59605	32.280	25.969	.018	1437.4
10.0	-1.772	.59601	32.277	25.966	.020	1437.4
11.0	-1.772	.59604	32.279	25.968	.022	1437.4
12.0	-1.772	.59603	32.278	25.967	.024	1437.4
13.0	-1.773	.59603	32.278	25.967	.026	1437.4
14.0	-1.772	.59607	32.278	25.967	.028	1437.4
15.0	-1.771	.59607	32.277	25.966	.030	1437.5
16.0	-1.771	.59610	32.279	25.968	.032	1437.5
17.0	-1.773	.59607	32.277	25.967	.034	1437.5
18.0	-1.771	.59608	32.276	25.965	.036	1437.5
19.0	-1.772	.59611	32.277	25.967	.039	1437.5
20.0	-1.773	.59612	32.279	25.968	.041	1437.5
21.0	-1.772	.59613	32.278	25.967	.043	1437.6
22.0	-1.772	.59613	32.277	25.966	.045	1437.6
23.0	-1.772	.59616	32.278	25.967	.047	1437.6
24.0	-1.772	.59616	32.277	25.967	.049	1437.6
25.0	-1.771	.59618	32.277	25.967	.051	1437.6
27.5	-1.772	.59620	32.277	25.967	.056	1437.7
30.0	-1.772	.59623	32.278	25.967	.061	1437.7
32.5	-1.772	.59625	32.279	25.968	.066	1437.7
35.0	-1.772	.59626	32.278	25.967	.071	1437.8
37.5	-1.771	.59631	32.278	25.967	.076	1437.8
40.0	-1.772	.59635	32.279	25.968	.081	1437.9
42.5	-1.772	.59639	32.280	25.969	.086	1437.9
45.0	-1.766	.59661	32.285	25.973	.091	1438.0
47.5	-1.742	.59753	32.313	25.995	.096	1438.2
50.0	-1.705	.59914	32.365	26.037	.101	1438.5
55.0	-1.605	.60355	32.515	26.156	.111	1439.2
60.0	-1.618	.60436	32.574	26.204	.120	1439.3
65.0	-1.615	.60498	32.605	26.229	.129	1439.5
70.0	-1.593	.60643	32.663	26.276	.137	1439.8
75.0	-1.587	.60763	32.724	26.326	.146	1440.0
80.0	-1.551	.61095	32.878	26.450	.154	1440.4
85.0	-1.522	.61309	32.970	26.524	.162	1440.8
90.0	-1.522	.61391	33.015	26.560	.169	1440.9
95.0	-1.520	.61463	33.052	26.591	.176	1441.1
100.0	-1.509	.61568	33.099	26.628	.183	1441.3
105.0	-1.509	.61643	33.141	26.662	.190	1441.4
110.0	-1.508	.61743	33.195	26.706	.197	1441.6
115.0	-1.497	.61814	33.222	26.728	.203	1441.7

SITE E6 EXPERIMENT 4127

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.511	.61859	33.262	26.760	.210	1441.8
125.0	-1.512	.61934	33.304	26.794	.216	1441.9
130.0	-1.492	.62026	33.332	26.817	.222	1442.2
135.0	-1.508	.62063	33.370	26.848	.228	1442.2
140.0	-1.499	.62158	33.412	26.882	.234	1442.4
145.0	-1.457	.62339	33.470	26.928	.240	1442.8
150.0	-1.412	.62518	33.521	26.968	.245	1443.1
155.0	-1.384	.62634	33.555	26.995	.250	1443.4
160.0	-1.348	.62760	33.587	27.020	.256	1443.7
165.0	-1.316	.62880	33.618	27.044	.261	1444.0
170.0	-1.259	.63099	33.680	27.092	.266	1444.4
175.0	-1.200	.63296	33.726	27.128	.270	1444.8
180.0	-1.124	.63557	33.791	27.178	.275	1445.4
185.0	-1.081	.63725	33.837	27.214	.279	1445.7
190.0	-1.015	.63939	33.885	27.251	.283	1446.2
195.0	-.981	.64060	33.915	27.273	.287	1446.4
200.0	-.924	.64260	33.964	27.311	.291	1446.9
210.0	-.774	.64757	34.078	27.397	.298	1447.9
220.0	-.658	.65170	34.181	27.476	.304	1448.7
230.0	-.516	.65635	34.282	27.552	.310	1449.7
240.0	-.384	.66068	34.377	27.622	.314	1450.6
250.0	-.265	.66457	34.460	27.684	.319	1451.4
260.0	-.167	.66782	34.528	27.734	.322	1452.1
270.0	-.057	.67122	34.592	27.780	.326	1452.9
280.0	-.016	.67268	34.623	27.803	.329	1453.3
290.0	.044	.67468	34.662	27.831	.331	1453.8
300.0	.091	.67617	34.688	27.850	.334	1454.2
310.0	.109	.67690	34.702	27.860	.336	1454.5
320.0	.134	.67777	34.718	27.871	.339	1454.8
330.0	.163	.67872	34.734	27.882	.341	1455.1
340.0	.184	.67954	34.750	27.894	.343	1455.4
350.0	.203	.68028	34.764	27.904	.345	1455.6
360.0	.216	.68090	34.778	27.915	.347	1455.9
370.0	.235	.68157	34.789	27.923	.348	1456.1
380.0	.249	.68212	34.799	27.930	.350	1456.4
390.0	.265	.68269	34.806	27.935	.352	1456.6
400.0	.281	.68332	34.817	27.943	.353	1456.9
425.0	.306	.68436	34.833	27.955	.357	1457.4
437.0	.309	.68459	34.836	27.957	.359	1457.6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EXP 4127 74-35.7 N 121-21.2 W
DATE 26/03/82 GMT 2240
STN E6
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+ = SURFACE FREEZING POINT
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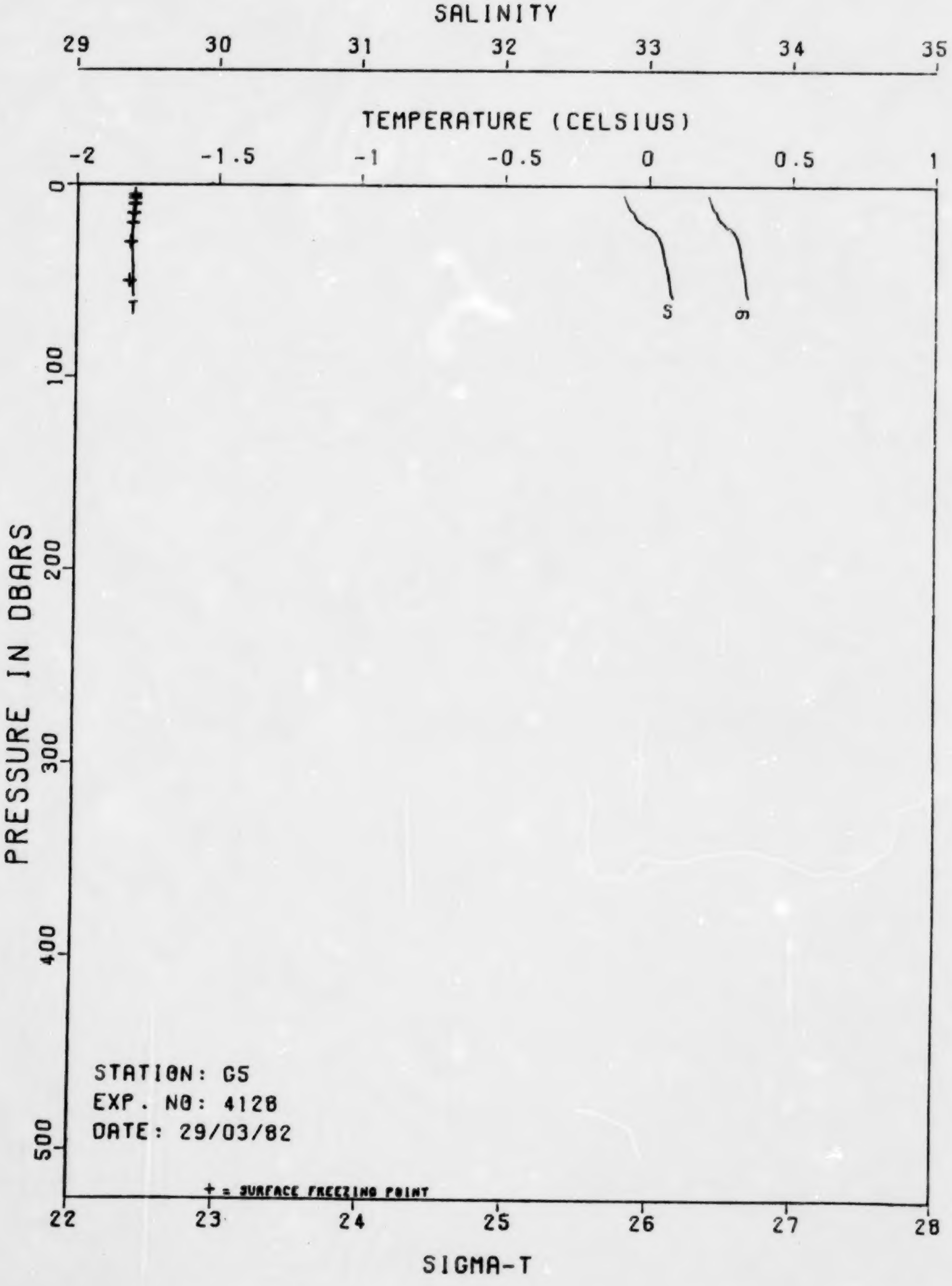
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: G5
EXP. NO: 4128
DATE: 29/03/82
+ = SURFACE FREEZING POINT
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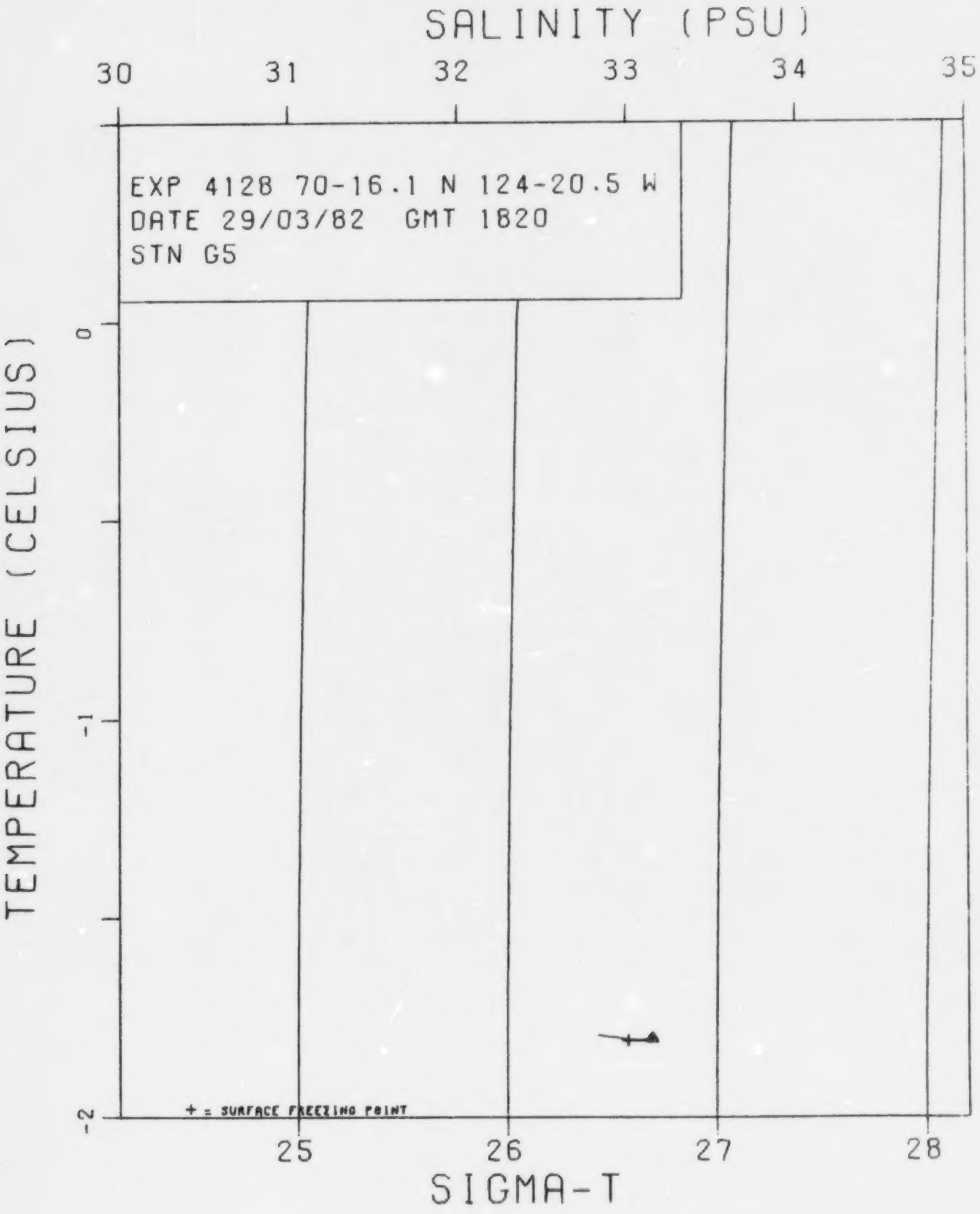
SIGMA-T

CRUISE C15-82-022 ARCTIC ISLANDS-82 SITE 65 EXPERIMENT 4128

LAT.N. 70-16- 5 LON.W. 124-20-30 DATE 29/ 3/82 G.M.T. 1820

ICE THICKNESS 1.2 M WATER DEPTH 62 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.1	-1.796	.60466	32.822	26.410	.008	1438.0
6.0	-1.796	.60475	32.827	26.414	.010	1438.0
7.0	-1.795	.60486	32.832	26.418	.011	1438.0
8.0	-1.796	.60495	32.838	26.423	.013	1438.0
9.0	-1.796	.60506	32.844	26.428	.014	1438.0
10.0	-1.797	.60513	32.848	26.431	.016	1438.1
11.0	-1.797	.60524	32.854	26.436	.018	1438.1
12.0	-1.799	.60533	32.861	26.442	.019	1438.1
13.0	-1.799	.60560	32.876	26.454	.021	1438.1
14.0	-1.800	.60593	32.897	26.471	.022	1438.2
15.0	-1.800	.60598	32.899	26.473	.024	1438.2
16.0	-1.800	.60602	32.901	26.474	.025	1438.2
17.0	-1.800	.60616	32.908	26.480	.027	1438.3
18.0	-1.802	.60640	32.924	26.493	.029	1438.3
19.0	-1.803	.60673	32.945	26.510	.030	1438.3
20.0	-1.804	.60701	32.962	26.524	.032	1438.4
21.0	-1.804	.60715	32.970	26.531	.033	1438.4
22.0	-1.806	.60774	33.006	26.560	.035	1438.4
23.0	-1.808	.60802	33.025	26.575	.036	1438.5
24.0	-1.808	.60834	33.044	26.590	.037	1438.5
25.0	-1.808	.60842	33.048	26.594	.039	1438.5
27.5	-1.808	.60884	33.071	26.613	.042	1438.6
30.0	-1.806	.60904	33.082	26.621	.046	1438.7
32.5	-1.808	.60929	33.094	26.632	.049	1438.7
35.0	-1.807	.60938	33.098	26.634	.053	1438.8
37.5	-1.806	.60952	33.104	26.639	.056	1438.8
40.0	-1.806	.60966	33.109	26.644	.060	1438.9
42.5	-1.804	.60993	33.122	26.654	.063	1439.0
45.0	-1.804	.61001	33.126	26.657	.067	1439.0
47.5	-1.804	.61019	33.134	26.664	.070	1439.1
50.0	-1.804	.61031	33.141	26.669	.074	1439.1
55.0	-1.804	.61049	33.148	26.675	.080	1439.2
58.3	-1.801	.61087	33.165	26.689	.085	1439.3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DATE 29/03/82 GMT 1820
STN G5
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+ = SURFACE FREEZING POINT
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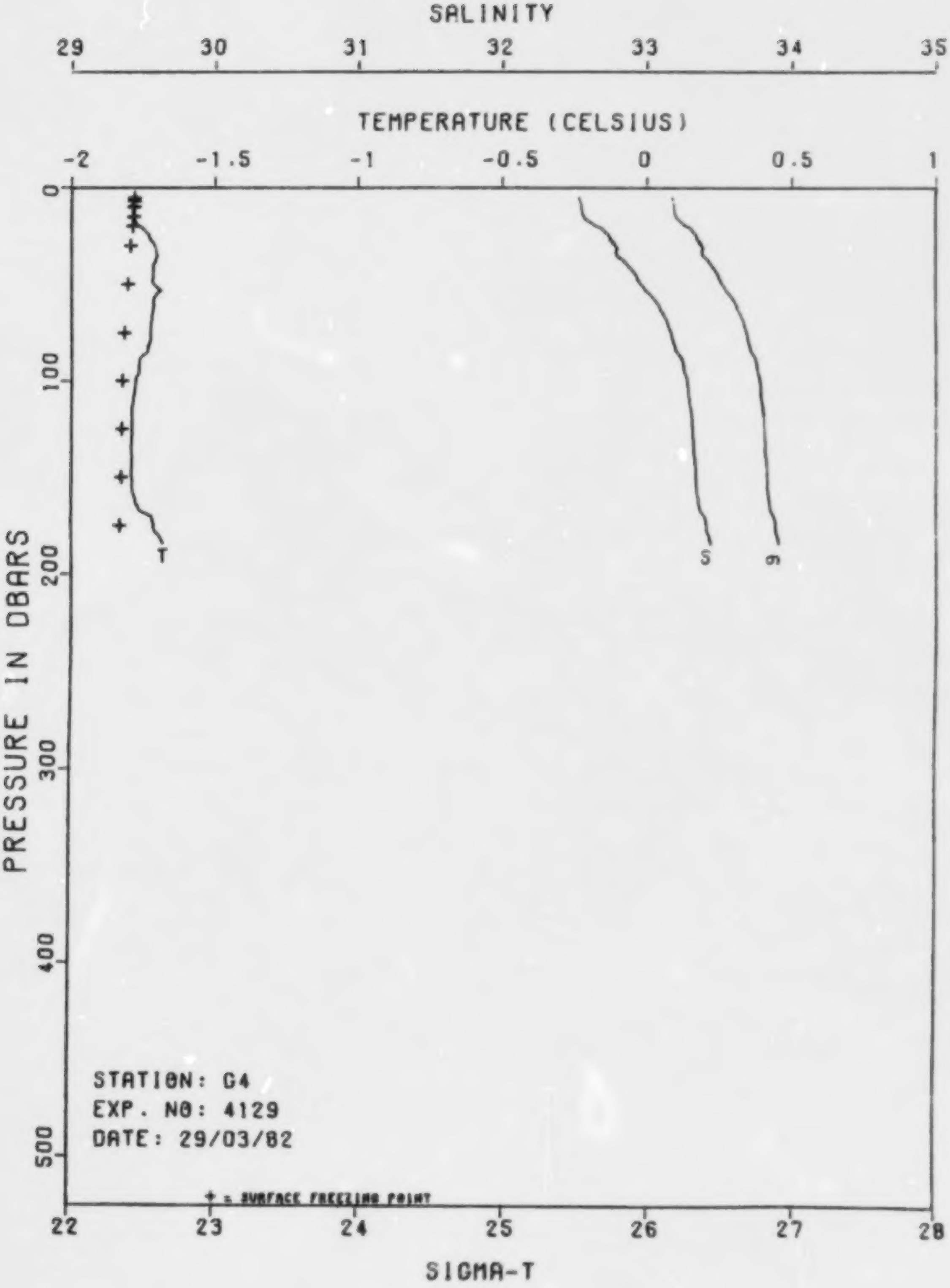
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: G4
EXP. NO: 4129
DATE: 29/03/82
+ = SURFACE FREEZING POINT
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CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE 64 EXPERIMENT 4129

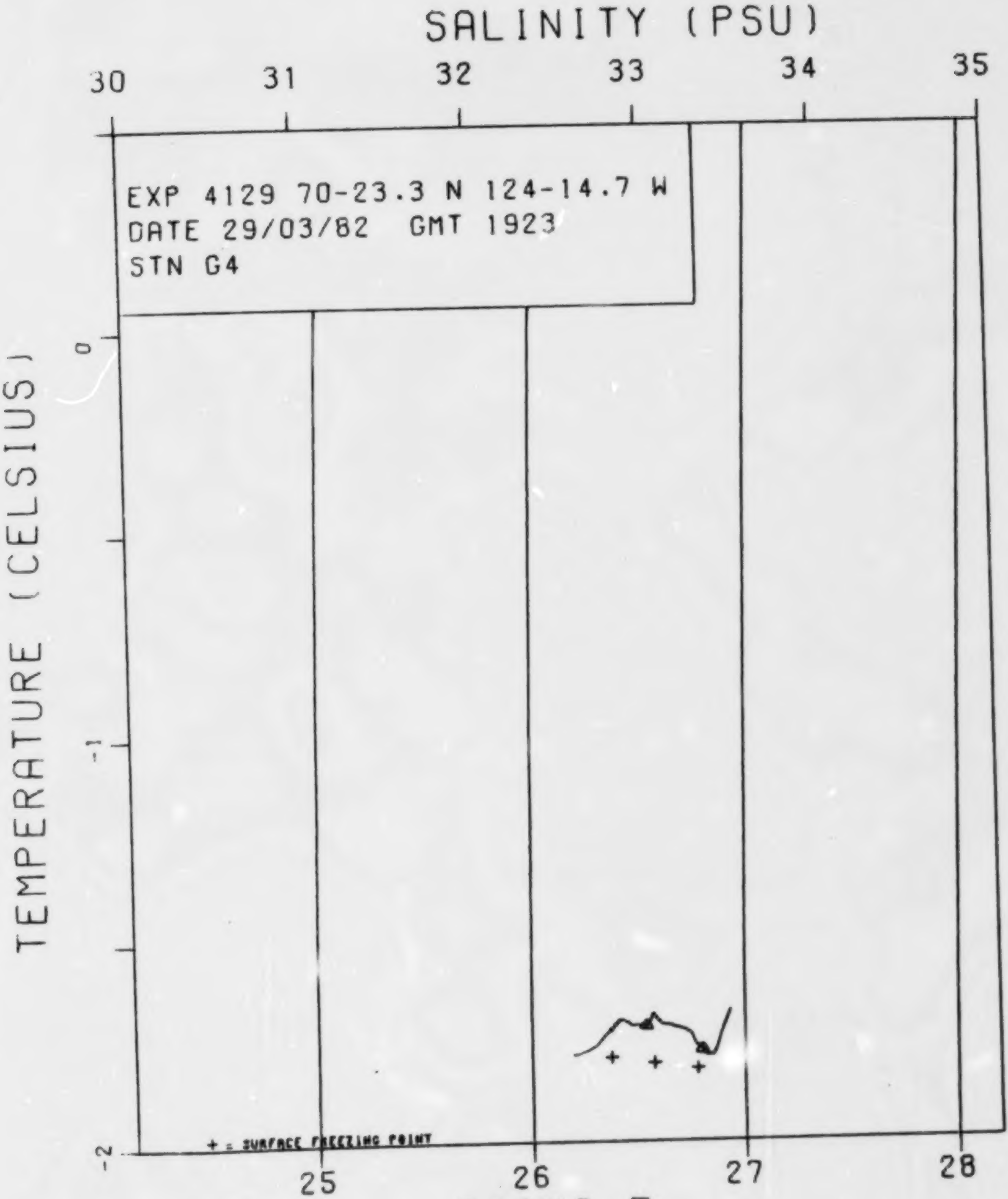
LAT.N. 76-23-17 LON.W. 124-14-42 DATE 29/ 3/82 G.M.T. 1923

ICE THICKNESS 1.4 M WATER DEPTH 187 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.0	-1.787	.59990	32.528	26.171	.009	1437.6
6.0	-1.788	.59998	32.533	26.175	.011	1437.6
7.0	-1.788	.60005	32.537	26.178	.013	1437.6
8.0	-1.788	.60013	32.541	26.181	.015	1437.6
9.0	-1.787	.60022	32.546	26.185	.017	1437.7
10.0	-1.787	.60028	32.548	26.187	.018	1437.7
11.0	-1.787	.60023	32.544	26.184	.020	1437.7
12.0	-1.787	.60028	32.547	26.186	.022	1437.7
13.0	-1.787	.60036	32.551	26.189	.024	1437.7
14.0	-1.787	.60045	32.555	26.193	.026	1437.8
15.0	-1.785	.60065	32.565	26.200	.027	1437.8
16.0	-1.782	.60080	32.570	26.205	.029	1437.8
17.0	-1.779	.60117	32.568	26.220	.031	1437.9
18.0	-1.777	.60154	32.607	26.235	.033	1438.0
19.0	-1.772	.60201	32.629	26.253	.035	1438.0
20.0	-1.768	.60241	32.648	26.268	.036	1438.1
21.0	-1.748	.60349	32.689	26.301	.038	1438.3
22.0	-1.747	.60369	32.699	26.309	.040	1438.3
23.0	-1.740	.60400	32.710	26.318	.041	1438.4
24.0	-1.734	.60439	32.726	26.330	.043	1438.4
25.0	-1.728	.60474	32.740	26.342	.045	1438.5
27.5	-1.721	.60489	32.740	26.341	.049	1438.6
30.0	-1.710	.60589	32.784	26.378	.053	1438.7
32.5	-1.706	.60594	32.781	26.375	.057	1438.8
35.0	-1.703	.60614	32.789	26.381	.061	1438.8
37.5	-1.710	.60687	32.838	26.421	.065	1438.9
40.0	-1.719	.60720	32.867	26.445	.069	1439.0
42.5	-1.715	.60774	32.893	26.466	.073	1439.1
45.0	-1.717	.60825	32.923	26.490	.077	1439.1
47.5	-1.715	.60849	32.934	26.500	.081	1439.2
50.0	-1.716	.60883	32.954	26.515	.085	1439.3
55.0	-1.706	.61020	33.022	26.570	.092	1439.5
60.0	-1.716	.61093	33.072	26.612	.099	1439.6
65.0	-1.720	.61152	33.109	26.641	.106	1439.7
70.0	-1.724	.61205	33.142	26.669	.113	1439.8
75.0	-1.726	.61244	33.164	26.686	.120	1439.9
80.0	-1.728	.61269	33.179	26.699	.126	1440.0
85.0	-1.735	.61301	33.203	26.718	.133	1440.1
90.0	-1.767	.61319	33.245	26.754	.139	1440.1
95.0	-1.767	.61341	33.256	26.762	.146	1440.2
100.0	-1.776	.61359	33.275	26.778	.152	1440.2
105.0	-1.781	.61367	33.280	26.782	.158	1440.3
110.0	-1.787	.61377	33.290	26.790	.165	1440.4
115.0	-1.790	.61392	33.300	26.798	.171	1440.5

SITE 64 EXPERIMENT 4129

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.789	.61413	33.308	26.605	.177	1440.6
125.0	-1.790	.61424	33.312	26.606	.183	1440.6
130.0	-1.790	.61437	33.317	26.612	.189	1440.7
135.0	-1.791	.61446	33.320	26.615	.195	1440.8
140.0	-1.790	.61471	33.331	26.623	.201	1440.9
145.0	-1.790	.61478	33.332	26.625	.207	1441.0
150.0	-1.791	.61487	33.336	26.626	.213	1441.1
155.0	-1.789	.61505	33.341	26.632	.219	1441.2
160.0	-1.780	.61544	33.351	26.640	.225	1441.3
165.0	-1.769	.61585	33.360	26.647	.231	1441.5
170.0	-1.721	.61746	33.399	26.677	.237	1441.8
175.0	-1.713	.61785	33.409	26.686	.243	1442.0
180.0	-1.694	.61855	33.427	26.699	.248	1442.2
184.5	-1.676	.61913	33.441	26.911	.253	1442.3


SALINITY (PSU)
30
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EXP 4129 70-23.3 N 124-14.7 W
DATE 29/03/82 GMT 1923
STN G4
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
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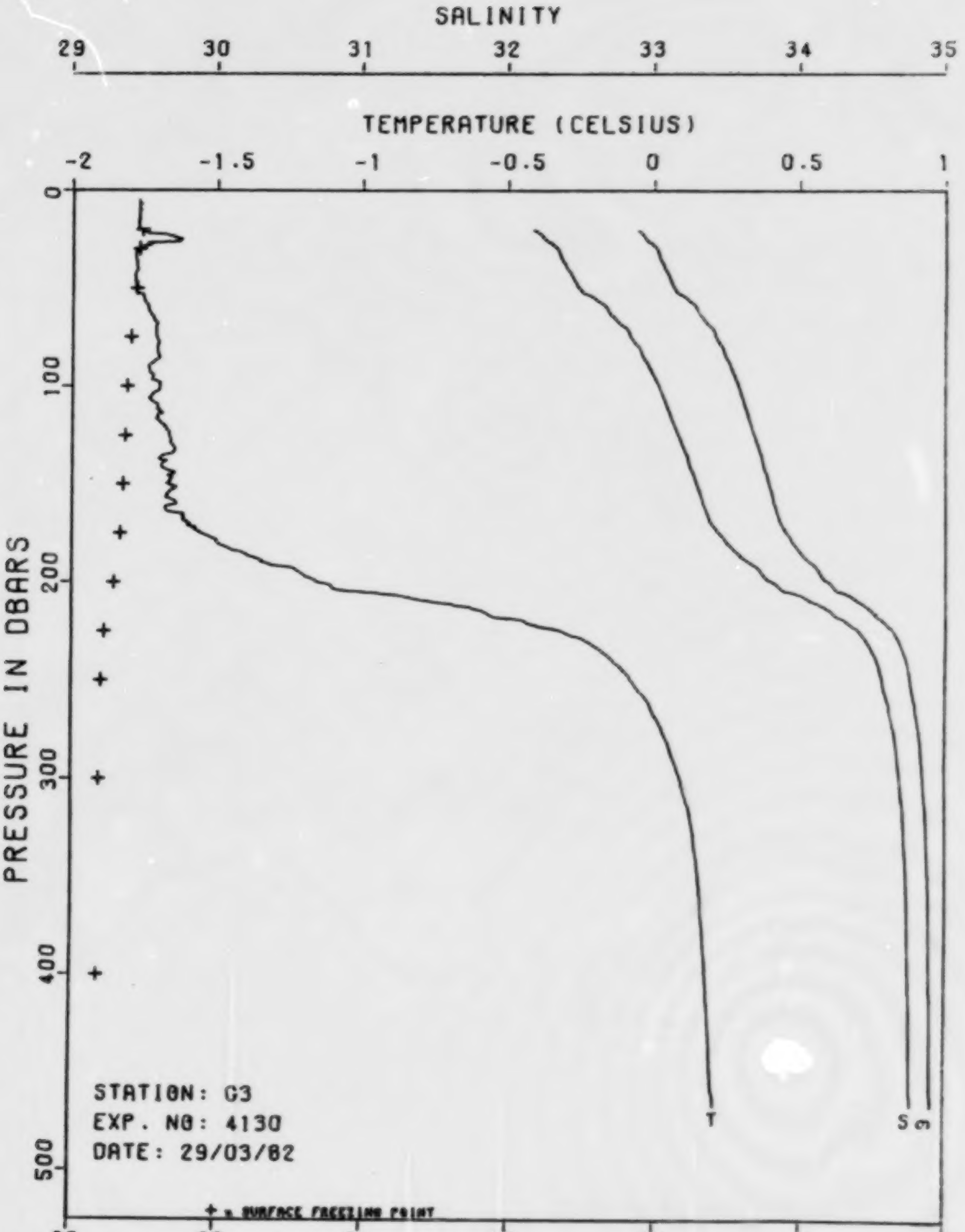
SIGMA-T


SALINITY
29
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35
TEMPERATURE (CELSIUS)
-2
-1.5
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-0.5
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PRESSURE IN DBARS
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STATION: G3
EXP. NO: 4130
DATE: 29/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE 63 EXPERIMENT 4130

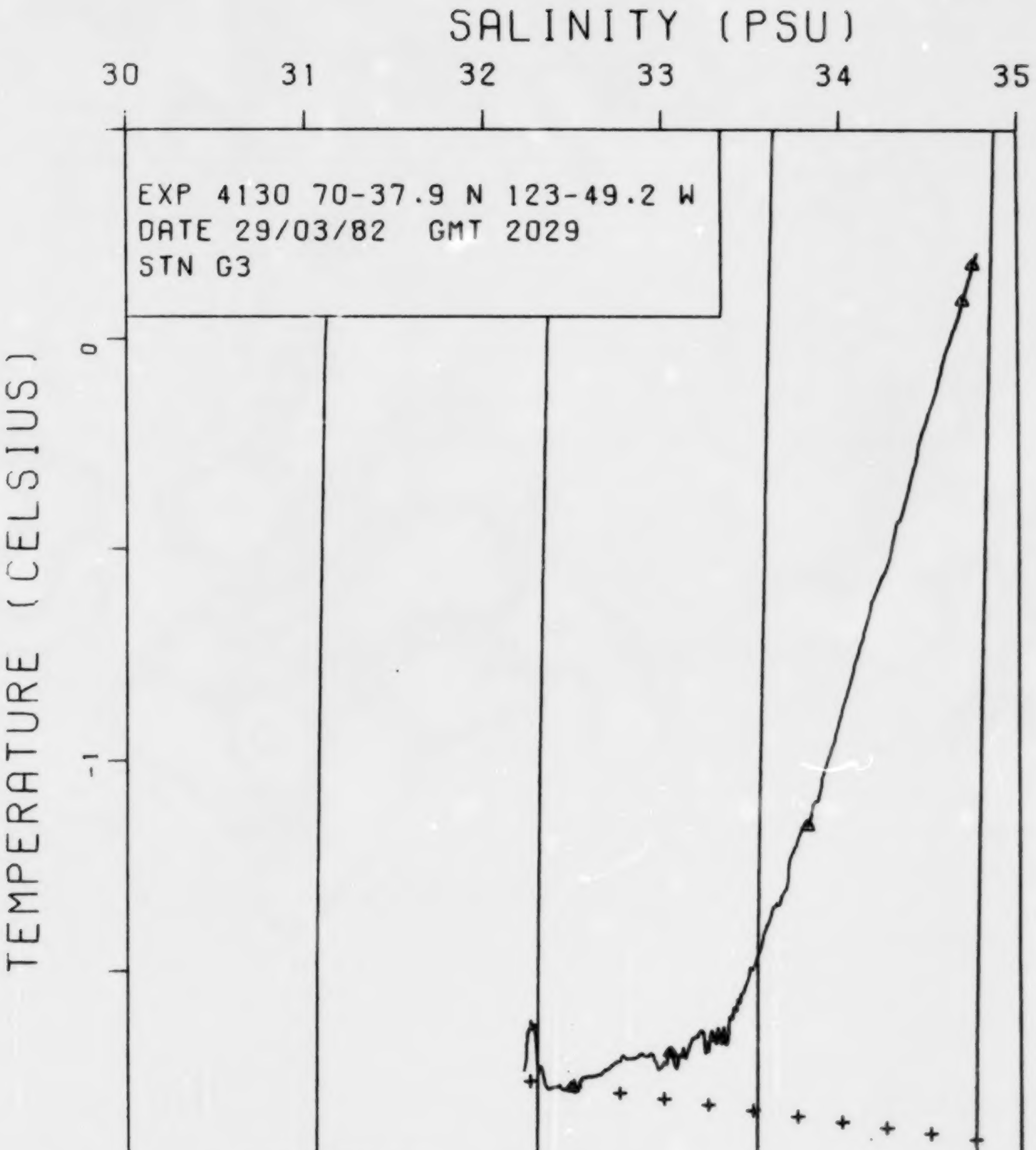
LAT.N. 70-37-54 LON.W. 123-49-11 DATE 29/ 3/82 G.M.T. 2029

ICE THICKNESS 1.7 M WATER DEPTH 467 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.772					
6.0	-1.771					
7.0	-1.770					
8.0	-1.770					
9.0	-1.771					
10.0	-1.771					
11.0	-1.772					
12.0	-1.773					
13.0	-1.771					
14.0	-1.771					
15.0	-1.772					
16.0	-1.773					
17.0	-1.775					
18.0	-1.775					
19.0	-1.773					
20.0	-1.765					
21.0	-1.748					
22.1	-1.739	.59564	32.212	25.913	.049	1437.6
23.0	-1.671	.59718	32.229	25.925	.051	1438.0
24.0	-1.647	.59779	32.238	25.932	.053	1438.1
25.0	-1.619	.59651	32.250	25.941	.055	1438.3
27.5	-1.731	.59737	32.303	25.987	.060	1437.9
30.0	-1.781	.59708	32.338	26.017	.065	1437.8
32.5	-1.785	.59726	32.353	26.029	.070	1437.8
35.0	-1.783	.59751	32.364	26.037	.075	1437.9
37.5	-1.779	.59601	32.387	26.056	.080	1438.0
40.0	-1.778	.59831	32.402	26.068	.085	1438.0
42.5	-1.787	.59863	32.430	26.091	.090	1438.1
45.0	-1.784	.59900	32.447	26.105	.094	1438.1
47.5	-1.784	.59932	32.465	26.120	.099	1438.2
50.0	-1.784	.59970	32.486	26.136	.104	1438.3
55.0	-1.754	.60208	32.591	26.222	.113	1438.6
60.0	-1.738	.60385	32.675	26.290	.122	1438.9
65.0	-1.719	.60515	32.730	26.333	.130	1439.2
70.0	-1.713	.60653	32.802	26.392	.138	1439.4
75.0	-1.712	.60720	32.837	26.420	.146	1439.5
80.0	-1.708	.60833	32.896	26.468	.154	1439.7
85.0	-1.698	.60901	32.922	26.489	.162	1439.9
90.0	-1.740	.60895	32.964	26.524	.169	1439.8
95.0	-1.721	.60996	32.999	26.552	.177	1440.0
100.0	-1.696	.61102	33.034	26.580	.184	1440.3
105.0	-1.728	.61095	33.059	26.601	.191	1440.2
110.0	-1.703	.61187	33.083	26.620	.198	1440.5
115.0	-1.707	.61234	33.112	26.644	.205	1440.6

SITE 63 EXPERIMENT 4130

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.681	.61334	33.141	26.666	.212	1440.8
125.0	-1.665	.61413	33.165	26.686	.219	1441.0
130.0	-1.651	.61489	33.192	26.706	.225	1441.2
135.0	-1.680	.61491	33.223	26.733	.232	1441.2
140.0	-1.692	.61504	33.241	26.746	.236	1441.2
145.0	-1.658	.61625	33.271	26.772	.245	1441.5
150.0	-1.671	.61640	33.292	26.789	.251	1441.6
155.0	-1.673	.61680	33.315	26.808	.257	1441.7
160.0	-1.641	.61780	33.335	26.823	.263	1442.0
165.0	-1.625	.61863	33.363	26.845	.269	1442.2
170.0	-1.603	.61959	33.392	26.869	.275	1442.4
175.0	-1.558	.62139	33.445	26.911	.281	1442.7
180.0	-1.499	.62348	33.500	26.954	.286	1443.2
185.0	-1.409	.62640	33.570	27.007	.291	1443.8
190.0	-1.336	.62936	33.658	27.077	.296	1444.3
195.0	-1.212	.63307	33.734	27.134	.301	1445.1
200.0	-1.156	.63559	33.815	27.198	.305	1445.6
210.0	-.753	.64823	34.093	27.408	.313	1448.0
220.0	-.439	.65830	34.314	27.574	.319	1449.9
230.0	-.231	.66497	34.455	27.678	.323	1451.3
240.0	-.137	.66619	34.528	27.732	.327	1451.9
250.0	-.078	.67014	34.566	27.760	.330	1452.4
260.0	-.023	.67194	34.600	27.785	.333	1452.9
270.0	.013	.67328	34.630	27.807	.336	1453.3
280.0	.042	.67449	34.659	27.829	.339	1453.6
290.0	.066	.67534	34.676	27.841	.342	1453.9
300.0	.091	.67623	34.691	27.852	.344	1454.2
310.0	.107	.67687	34.704	27.861	.346	1454.5
320.0	.124	.67746	34.712	27.867	.349	1454.7
330.0	.133	.67789	34.720	27.873	.351	1454.9
340.0	.143	.67831	34.727	27.878	.353	1455.1
350.0	.152	.67872	34.733	27.883	.355	1455.4
360.0	.156	.67899	34.738	27.886	.357	1455.5
370.0	.161	.67921	34.739	27.887	.359	1455.7
380.0	.166	.67949	34.743	27.890	.362	1455.9
390.0	.171	.67974	34.746	27.892	.364	1456.1
400.0	.176	.67999	34.748	27.893	.366	1456.3
425.0	.186	.68064	34.759	27.902	.371	1456.8
450.0	.195	.68115	34.763	27.905	.375	1457.2
467.4	.205	.68171	34.773	27.912	.379	1457.6


SALINITY (PSU)
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EXP 4130 70-37.9 N 123-49.2 W
DATE 29/03/82 GMT 2029
STN G3
TEMPERATURE (CELSIUS)
0
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-2
+ = SURFACE FREEZING POINT
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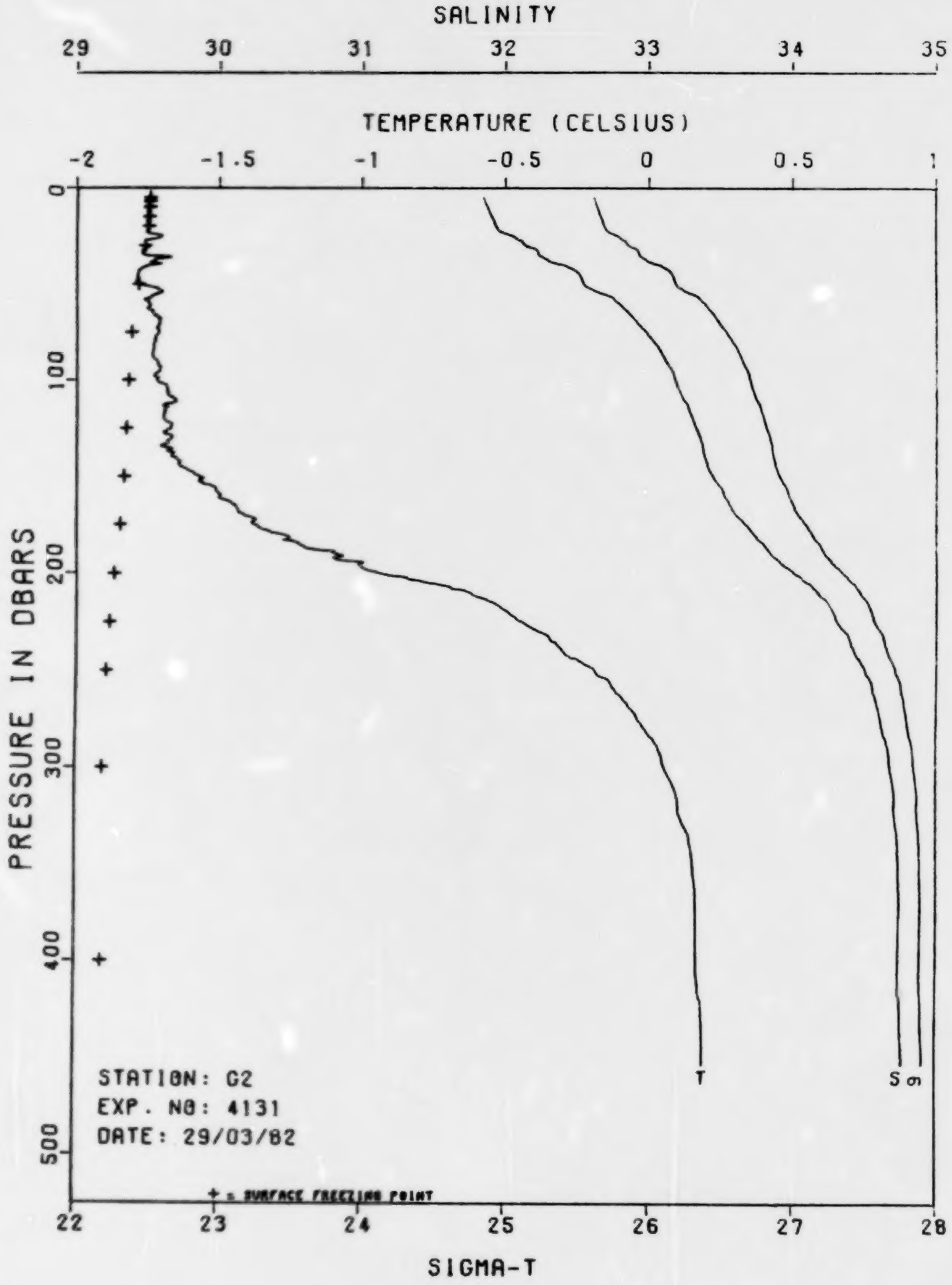
SIGMA-T


SALINITY
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34
35
TEMPERATURE (CELSIUS)
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-1.5
-1
-0.5
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PRESSURE IN DBARS
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STATION: G2
EXP. NO: 4131
DATE: 29/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE 62   EXPERIMENT 4131

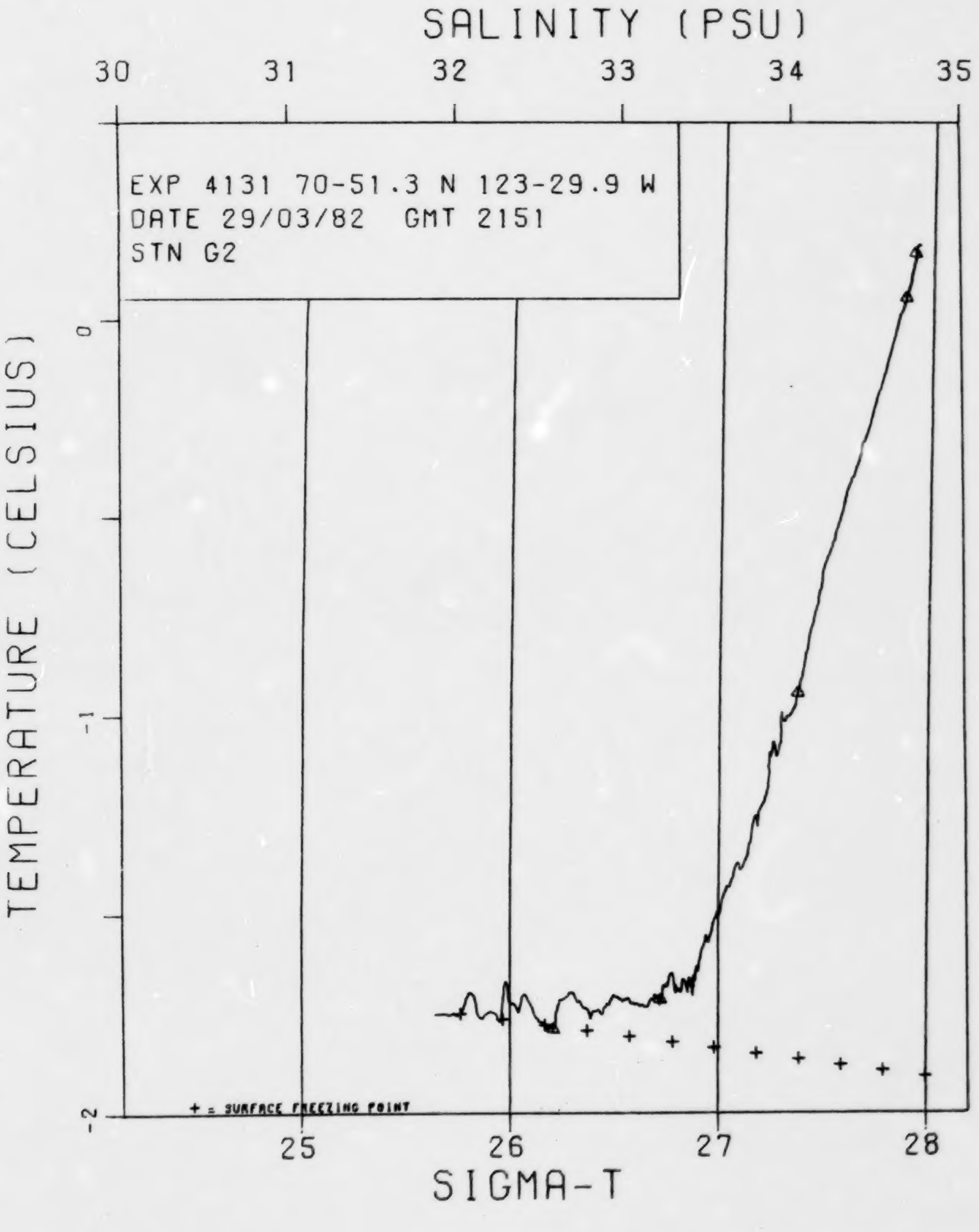
LAT.N. 70-51-16   LON.W. 123-29-54   DATE 29/ 3/82   G.M.T. 2151

ICE THICKNESS 1.6 M   WATER DEPTH 454 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.0	-1.753	.58905	31.846	25.616	.012	1436.8
6.0	-1.753	.58918	31.853	25.621	.014	1436.8
7.0	-1.753	.58924	31.856	25.624	.017	1436.8
8.0	-1.753	.58933	31.861	25.628	.019	1436.9
9.0	-1.753	.58945	31.868	25.634	.021	1436.9
10.0	-1.753	.58956	31.875	25.639	.024	1436.9
11.0	-1.752	.58970	31.880	25.643	.026	1436.9
12.0	-1.752	.58977	31.884	25.646	.028	1437.0
13.0	-1.752	.58987	31.889	25.651	.031	1437.0
14.0	-1.752	.59003	31.898	25.658	.033	1437.0
15.0	-1.753	.59016	31.906	25.665	.035	1437.0
16.0	-1.753	.59026	31.912	25.670	.038	1437.1
17.0	-1.754	.59038	31.919	25.675	.040	1437.1
18.0	-1.755	.59046	31.924	25.679	.042	1437.1
19.0	-1.755	.59052	31.927	25.681	.044	1437.1
20.0	-1.754	.59067	31.934	25.687	.047	1437.1
21.0	-1.754	.59079	31.940	25.692	.049	1437.2
22.0	-1.753	.59103	31.953	25.702	.051	1437.2
23.0	-1.757	.59127	31.971	25.717	.054	1437.2
24.0	-1.744	.59206	32.004	25.744	.056	1437.4
25.0	-1.697	.59375	32.052	25.782	.058	1437.7
27.5	-1.762	.59354	32.109	25.829	.064	1437.5
30.0	-1.752	.59426	32.140	25.855	.069	1437.6
32.5	-1.771	.59537	32.225	25.924	.074	1437.7
35.0	-1.763	.59576	32.238	25.935	.079	1437.8
37.5	-1.721	.59753	32.295	25.980	.084	1438.1
40.0	-1.726	.59932	32.406	26.070	.089	1438.3
42.5	-1.773	.59970	32.478	26.130	.094	1438.2
45.0	-1.785	.60014	32.516	26.161	.099	1438.2
47.5	-1.790	.60039	32.534	26.176	.103	1438.3
50.0	-1.789	.60061	32.545	26.185	.108	1438.3
55.0	-1.702	.60440	32.672	26.286	.117	1439.0
60.0	-1.745	.60564	32.790	26.383	.125	1439.1
65.0	-1.734	.60708	32.860	26.440	.133	1439.3
70.0	-1.711	.60853	32.918	26.486	.141	1439.6
75.0	-1.712	.60965	32.983	26.539	.148	1439.7
80.0	-1.725	.61033	33.035	26.582	.156	1439.8
85.0	-1.735	.61098	33.081	26.619	.163	1439.9
90.0	-1.719	.61195	33.118	26.649	.170	1440.1
95.0	-1.710	.61287	33.160	26.682	.176	1440.3
100.0	-1.721	.61310	33.182	26.701	.183	1440.4
105.0	-1.678	.61435	33.206	26.719	.190	1440.7
110.0	-1.653	.61540	33.237	26.744	.196	1440.9
115.0	-1.693	.61535	33.276	26.776	.202	1440.9

SITE 62 EXPERIMENT 4131

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.696	.61580	33.303	26.799	.209	1441.0
125.0	-1.669	.61675	33.326	26.817	.215	1441.2
130.0	-1.663	.61746	33.358	26.842	.221	1441.4
135.0	-1.682	.61739	33.372	26.854	.227	1441.4
140.0	-1.667	.61791	33.384	26.864	.232	1441.6
145.0	-1.635	.61899	33.409	26.883	.238	1441.8
150.0	-1.569	.62093	33.447	26.912	.244	1442.3
155.0	-1.523	.62272	33.498	26.952	.249	1442.7
160.0	-1.490	.62387	33.526	26.974	.255	1442.9
165.0	-1.443	.62552	33.567	27.007	.260	1443.3
170.0	-1.409	.62694	33.610	27.040	.265	1443.6
175.0	-1.374	.62883	33.679	27.095	.270	1443.9
180.0	-1.278	.63164	33.733	27.136	.275	1444.6
185.0	-1.217	.63399	33.800	27.189	.279	1445.0
190.0	-1.096	.63725	33.851	27.225	.283	1445.7
195.0	-1.003	.64021	33.917	27.275	.287	1446.3
200.0	-.938	.64314	34.011	27.350	.291	1446.9
210.0	-.622	.65221	34.175	27.470	.297	1448.7
220.0	-.490	.65674	34.282	27.550	.303	1449.6
230.0	-.382	.66040	34.364	27.612	.308	1450.4
240.0	-.301	.66319	34.427	27.659	.312	1451.1
250.0	-.187	.66689	34.504	27.716	.316	1451.8
260.0	-.118	.66928	34.556	27.754	.320	1452.4
270.0	-.059	.67123	34.595	27.782	.323	1452.9
280.0	-.012	.67278	34.624	27.804	.326	1453.3
290.0	.035	.67458	34.667	27.836	.329	1453.7
300.0	.056	.67538	34.683	27.847	.331	1454.0
310.0	.091	.67657	34.705	27.863	.333	1454.4
320.0	.105	.67703	34.709	27.866	.336	1454.6
330.0	.124	.67770	34.720	27.874	.338	1454.9
340.0	.147	.67851	34.733	27.883	.340	1455.2
350.0	.156	.67890	34.739	27.887	.342	1455.4
360.0	.162	.67918	34.742	27.889	.344	1455.6
370.0	.165	.67940	34.745	27.892	.346	1455.8
380.0	.166	.67947	34.742	27.889	.348	1455.9
390.0	.167	.67954	34.739	27.887	.350	1456.1
400.0	.168	.67964	34.737	27.885	.353	1456.3
425.0	.186	.68051	34.752	27.896	.358	1456.8
450.0	.190	.68106	34.763	27.905	.363	1457.2
454.0	.190	.68112	34.764	27.906	.363	1457.3


SALINITY (PSU)
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EXP 4131 70-51.3 N 123-29.9 W
DATE 29/03/82 GMT 2151
STN G2
TEMPERATURE (CELSIUS)
0
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-2
+ = SURFACE FREEZING POINT
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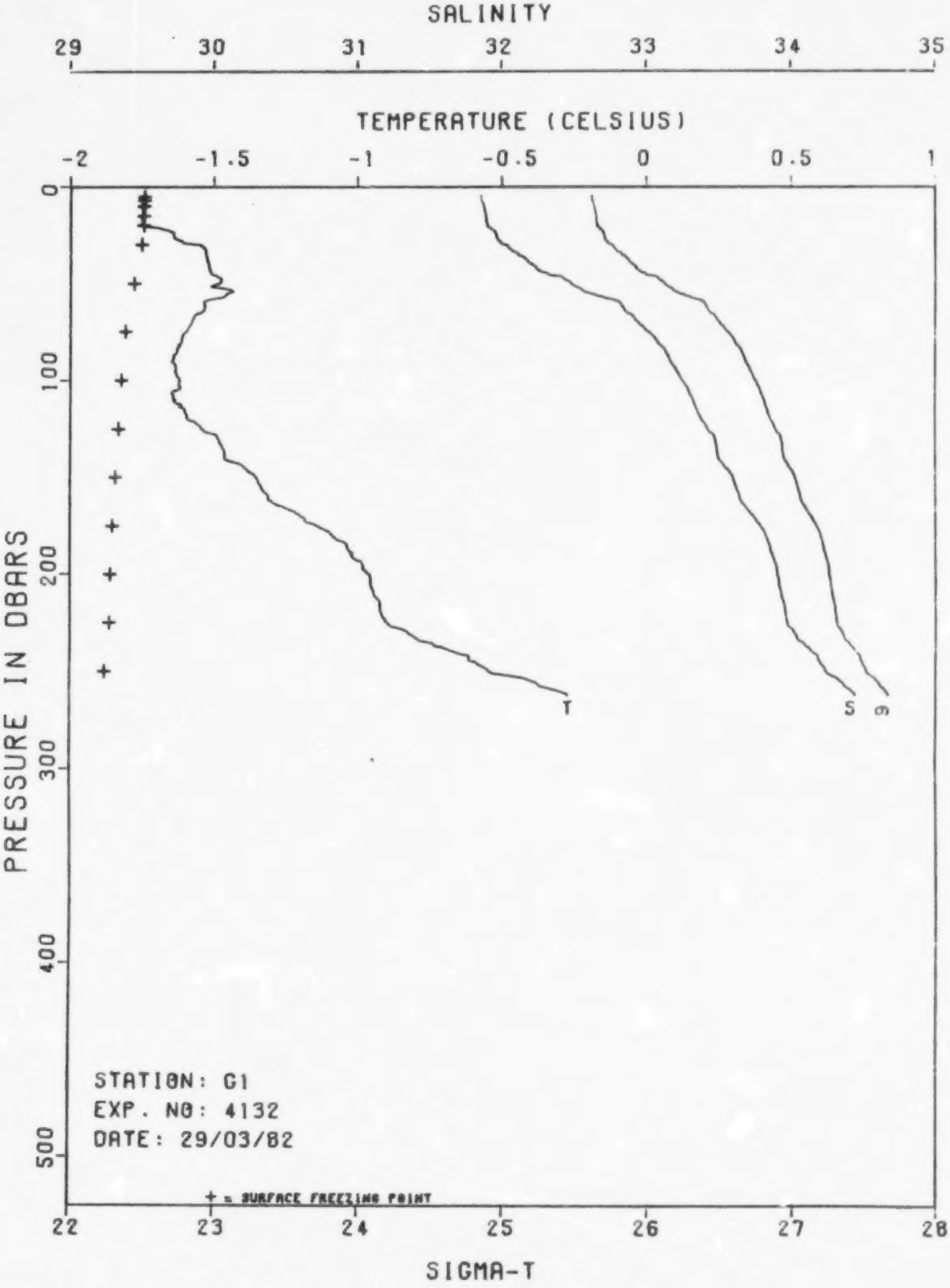
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: G1
EXP. NO: 4132
DATE: 29/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE 61 EXPERIMENT 4132

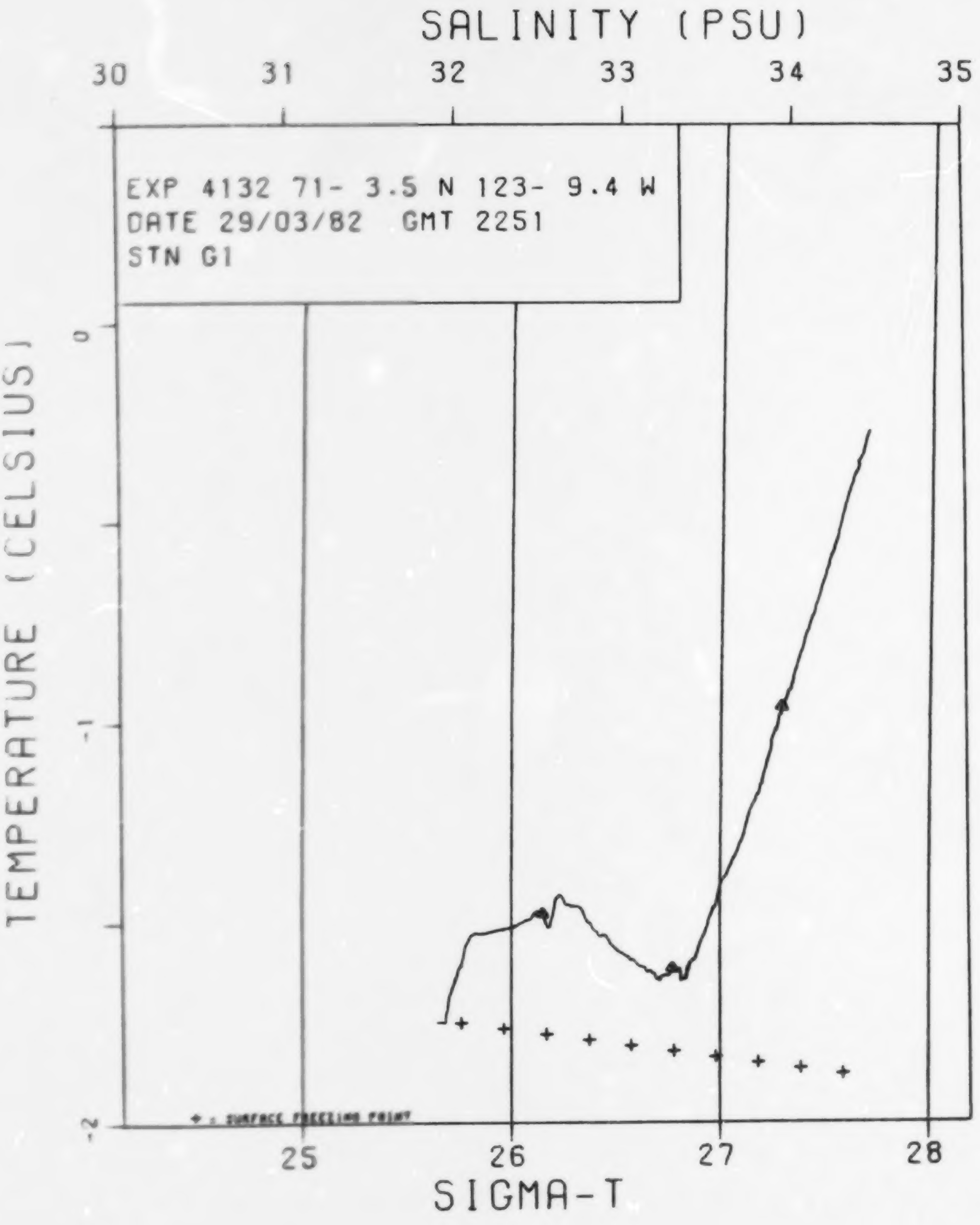
LAT.N. 71- 3-30 LON.W. 123- 9-23 DATE 29/ 3/82 G.M.T. 2251

ICE THICKNESS 1.4 M WATER DEPTH 264 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.7	-1.746	.58924	31.853	25.621	.011	1436.8
5.0	-1.749	.58927	31.855	25.623	.012	1436.8
6.0	-1.749	.58934	31.858	25.626	.014	1436.8
7.0	-1.749	.58937	31.859	25.626	.017	1436.9
8.0	-1.749	.58944	31.863	25.630	.019	1436.9
9.0	-1.749	.58961	31.872	25.637	.021	1436.9
10.0	-1.748	.58967	31.875	25.639	.024	1436.9
11.0	-1.750	.58975	31.880	25.643	.026	1436.9
12.0	-1.749	.58980	31.882	25.645	.028	1437.0
13.0	-1.749	.58986	31.885	25.647	.031	1437.0
14.0	-1.749	.58992	31.888	25.650	.033	1437.0
15.0	-1.750	.58997	31.891	25.653	.035	1437.0
16.0	-1.750	.59000	31.892	25.653	.038	1437.0
17.0	-1.750	.58998	31.890	25.652	.040	1437.1
18.0	-1.751	.59004	31.894	25.655	.042	1437.1
19.0	-1.751	.59012	31.899	25.659	.045	1437.1
20.0	-1.752	.59016	31.902	25.661	.047	1437.1
21.0	-1.707	.59126	31.918	25.673	.049	1437.4
22.0	-1.680	.59196	31.930	25.683	.051	1437.5
23.0	-1.650	.59289	31.952	25.700	.054	1437.7
24.0	-1.638	.59329	31.962	25.708	.056	1437.8
25.0	-1.640	.59330	31.964	25.710	.058	1437.8
27.5	-1.628	.59368	31.972	25.716	.064	1437.9
30.0	-1.558	.59579	32.021	25.754	.070	1438.4
32.5	-1.529	.59704	32.061	25.786	.075	1438.6
35.0	-1.529	.59803	32.118	25.832	.081	1438.7
37.5	-1.524	.59899	32.167	25.872	.086	1438.9
40.0	-1.519	.59976	32.206	25.903	.091	1439.0
42.5	-1.516	.60047	32.243	25.933	.096	1439.1
45.0	-1.508	.60193	32.320	25.996	.101	1439.3
47.5	-1.475	.60448	32.432	26.086	.106	1439.6
50.0	-1.482	.60524	32.483	26.128	.111	1439.7
55.0	-1.448	.60800	32.606	26.226	.120	1440.1
60.0	-1.539	.61006	32.824	26.406	.129	1440.1
65.0	-1.543	.61069	32.864	26.438	.137	1440.2
70.0	-1.577	.61146	32.944	26.504	.144	1440.2
75.0	-1.594	.61233	33.011	26.559	.152	1440.3
80.0	-1.613	.61310	33.075	26.611	.159	1440.4
85.0	-1.626	.61387	33.134	26.660	.166	1440.5
90.0	-1.646	.61410	33.165	26.685	.173	1440.5
95.0	-1.631	.61512	33.206	26.718	.179	1440.8
100.0	-1.620	.61603	33.244	26.749	.186	1440.9
105.0	-1.626	.61677	33.291	26.787	.192	1441.1
110.0	-1.632	.61722	33.322	26.812	.198	1441.2

SITE 61 EXPERIMENT 4132

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.600	.61832	33.348	26.833	.204	1441.4
120.0	-1.594	.61904	33.381	26.859	.210	1441.6
125.0	-1.544	.62071	33.420	26.890	.216	1442.0
130.0	-1.483	.62277	33.472	26.930	.221	1442.4
135.0	-1.466	.62334	33.483	26.939	.227	1442.6
140.0	-1.461	.62368	33.494	26.948	.232	1442.7
145.0	-1.391	.62597	33.547	26.984	.238	1443.2
150.0	-1.353	.62757	33.597	27.026	.243	1443.5
155.0	-1.333	.62843	33.622	27.047	.248	1443.7
160.0	-1.306	.62937	33.643	27.064	.253	1444.0
165.0	-1.263	.63092	33.683	27.095	.258	1444.3
170.0	-1.195	.63325	33.741	27.140	.262	1444.8
175.0	-1.141	.63511	33.766	27.175	.267	1445.2
180.0	-1.083	.63697	33.826	27.205	.271	1445.6
185.0	-1.034	.63839	33.851	27.224	.275	1445.9
190.0	-1.017	.63912	33.872	27.240	.279	1446.1
195.0	-.980	.64026	33.894	27.256	.283	1446.4
200.0	-.958	.64093	33.905	27.264	.287	1446.6
210.0	-.941	.64182	33.932	27.286	.295	1446.9
220.0	-.916	.64290	33.960	27.306	.303	1447.2
230.0	-.824	.64587	34.023	27.355	.310	1447.9
240.0	-.665	.65119	34.146	27.448	.317	1449.0
250.0	-.543	.65532	34.241	27.520	.322	1449.8
260.0	-.305	.66313	34.416	27.650	.327	1451.3
262.6	-.269	.66436	34.445	27.672	.328	1451.6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31
32
33
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35
EXP 4132 71- 3.5 N 123- 9.4 W
DATE 29/03/82 GMT 2251
STN G1
TEMPERATURE (CELSIUS)
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-1
-2
+ : SURFACE FREEZING POINT
25
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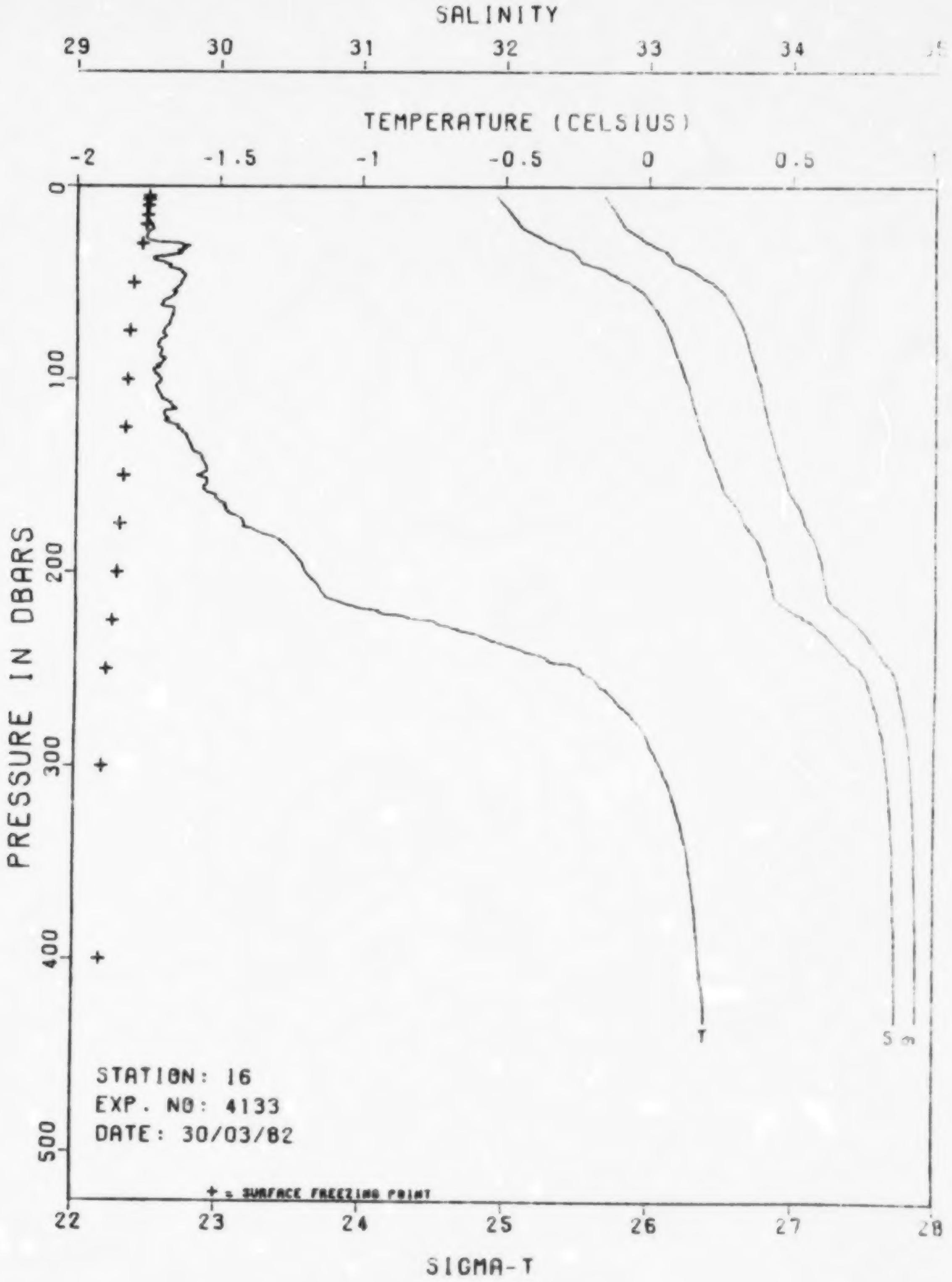
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
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-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
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STATION: 16
EXP. NO: 4133
DATE: 30/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE 16   EXPERIMENT 4133

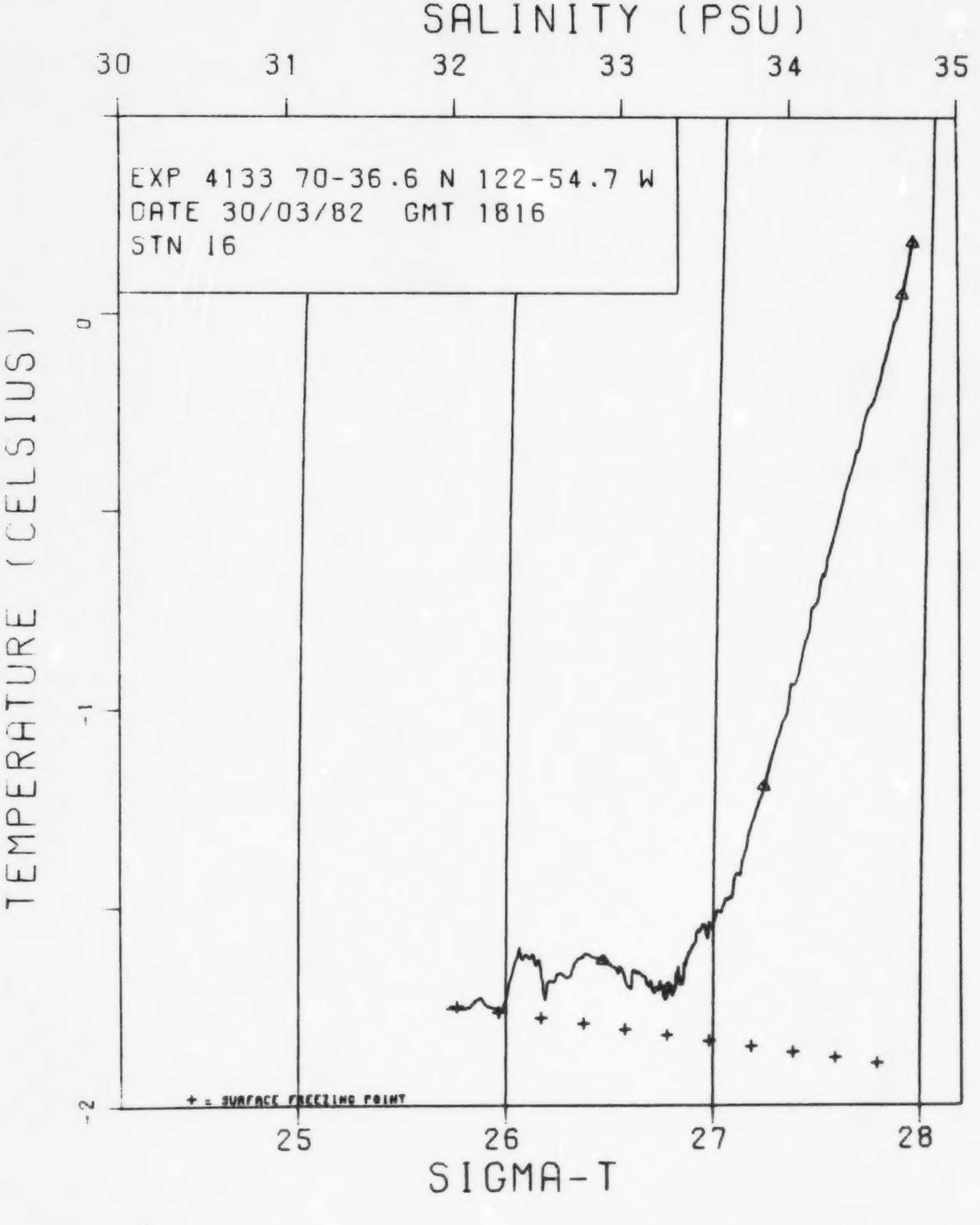
LAT.N. 70-36-35   LON.W. 122-54-41   DATE 30/ 3/82   G.M.T. 1816

ICE THICKNESS   1.4 M   WATER DEPTH   433   M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.0	-1.757	.59050	31.936	25.689	.011	1436.9
5.0	-1.758	.59053	31.939	25.692	.012	1436.9
6.0	-1.757	.59070	31.948	25.699	.014	1436.9
7.0	-1.756	.59087	31.956	25.705	.016	1437.0
8.0	-1.757	.59110	31.970	25.717	.018	1437.0
9.0	-1.757	.59129	31.981	25.725	.021	1437.0
10.0	-1.756	.59152	31.994	25.736	.023	1437.1
11.0	-1.757	.59175	32.007	25.747	.025	1437.1
12.0	-1.757	.59194	32.018	25.756	.027	1437.1
13.0	-1.757	.59210	32.027	25.763	.030	1437.1
14.0	-1.757	.59229	32.037	25.771	.032	1437.2
15.0	-1.756	.59250	32.048	25.780	.034	1437.2
16.0	-1.755	.59269	32.057	25.788	.036	1437.3
17.0	-1.754	.59292	32.069	25.797	.038	1437.3
18.0	-1.751	.59315	32.080	25.806	.041	1437.3
19.0	-1.743	.59350	32.091	25.815	.043	1437.4
20.0	-1.740	.59372	32.100	25.822	.045	1437.4
21.0	-1.735	.59397	32.109	25.830	.047	1437.5
22.0	-1.733	.59428	32.125	25.842	.049	1437.5
23.0	-1.742	.59462	32.155	25.866	.051	1437.6
24.0	-1.752	.59487	32.179	25.886	.054	1437.6
25.0	-1.755	.59527	32.206	25.908	.056	1437.6
27.5	-1.757	.59625	32.265	25.956	.061	1437.7
30.0	-1.636	.59985	32.344	26.016	.066	1438.5
32.5	-1.631	.60139	32.429	26.087	.071	1438.6
35.0	-1.633	.60237	32.467	26.134	.075	1438.7
37.5	-1.736	.60104	32.520	26.163	.080	1438.3
40.0	-1.685	.60259	32.555	26.191	.085	1438.7
42.5	-1.674	.60487	32.676	26.289	.089	1438.9
45.0	-1.627	.60669	32.732	26.333	.093	1439.3
47.5	-1.623	.60776	32.789	26.379	.097	1439.4
50.0	-1.635	.60900	32.875	26.449	.101	1439.5
55.0	-1.646	.61031	32.963	26.521	.109	1439.7
60.0	-1.701	.61016	33.010	26.561	.116	1439.6
65.0	-1.666	.61176	33.063	26.603	.124	1439.9
70.0	-1.675	.61234	33.105	26.637	.131	1440.0
75.0	-1.696	.61245	33.132	26.660	.137	1440.0
80.0	-1.712	.61272	33.163	26.685	.144	1440.1
85.0	-1.700	.61334	33.182	26.701	.151	1440.2
90.0	-1.690	.61403	33.209	26.722	.157	1440.4
95.0	-1.735	.61365	33.234	26.743	.164	1440.3
100.0	-1.703	.61470	33.258	26.762	.170	1440.6
105.0	-1.722	.61480	33.281	26.782	.177	1440.6
110.0	-1.702	.61552	33.299	26.796	.183	1440.8

SITE 16   EXPERIMENT 4133

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.651	.61682	33.317	26.809	.189	1441.1
120.0	-1.686	.61654	33.336	26.825	.195	1441.1
125.0	-1.651	.61760	33.357	26.841	.201	1441.4
130.0	-1.615	.61877	33.362	26.861	.207	1441.6
135.0	-1.597	.61952	33.404	26.878	.213	1441.8
140.0	-1.561	.62072	33.431	26.899	.218	1442.1
145.0	-1.544	.62161	33.462	26.924	.224	1442.3
150.0	-1.582	.62142	33.489	26.947	.230	1442.3
155.0	-1.547	.62253	33.513	26.966	.235	1442.6
160.0	-1.507	.62396	33.551	26.995	.240	1442.9
165.0	-1.483	.62543	33.607	27.040	.245	1443.2
170.0	-1.455	.62668	33.646	27.071	.250	1443.4
175.0	-1.411	.62797	33.670	27.089	.255	1443.8
180.0	-1.346	.63021	33.726	27.132	.260	1444.2
185.0	-1.270	.63249	33.771	27.167	.264	1444.7
190.0	-1.236	.63363	33.797	27.186	.269	1445.0
195.0	-1.206	.63470	33.823	27.207	.273	1445.3
200.0	-1.194	.63513	33.831	27.213	.277	1445.4
210.0	-1.136	.63689	33.866	27.239	.285	1445.9
220.0	-.935	.64329	34.004	27.344	.293	1447.2
230.0	-.658	.65216	34.201	27.492	.299	1448.9
240.0	-.438	.65680	34.330	27.587	.305	1450.3
250.0	-.228	.66563	34.475	27.697	.309	1451.6
260.0	-.149	.66833	34.537	27.741	.313	1452.2
270.0	-.079	.67060	34.582	27.773	.316	1452.8
280.0	-.017	.67259	34.619	27.800	.319	1453.3
290.0	.012	.67372	34.645	27.819	.322	1453.6
300.0	.051	.67498	34.666	27.834	.324	1454.0
310.0	.077	.67586	34.680	27.844	.327	1454.3
320.0	.099	.67659	34.690	27.851	.329	1454.6
330.0	.121	.67736	34.701	27.858	.332	1454.8
340.0	.135	.67782	34.708	27.863	.334	1455.1
350.0	.146	.67823	34.712	27.866	.336	1455.3
360.0	.156	.67861	34.717	27.869	.338	1455.5
370.0	.165	.67893	34.719	27.870	.341	1455.7
380.0	.171	.67920	34.721	27.872	.343	1455.9
390.0	.176	.67957	34.730	27.879	.345	1456.1
400.0	.183	.67979	34.730	27.878	.347	1456.3
425.0	.201	.68048	34.733	27.880	.353	1456.8
432.4	.201	.68055	34.732	27.879	.354	1456.9


SALINITY (PSU)
30
31
32
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35
EXP 4133 70-36.6 N 122-54.7 W
DATE 30/03/82 GMT 1816
STN 16
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
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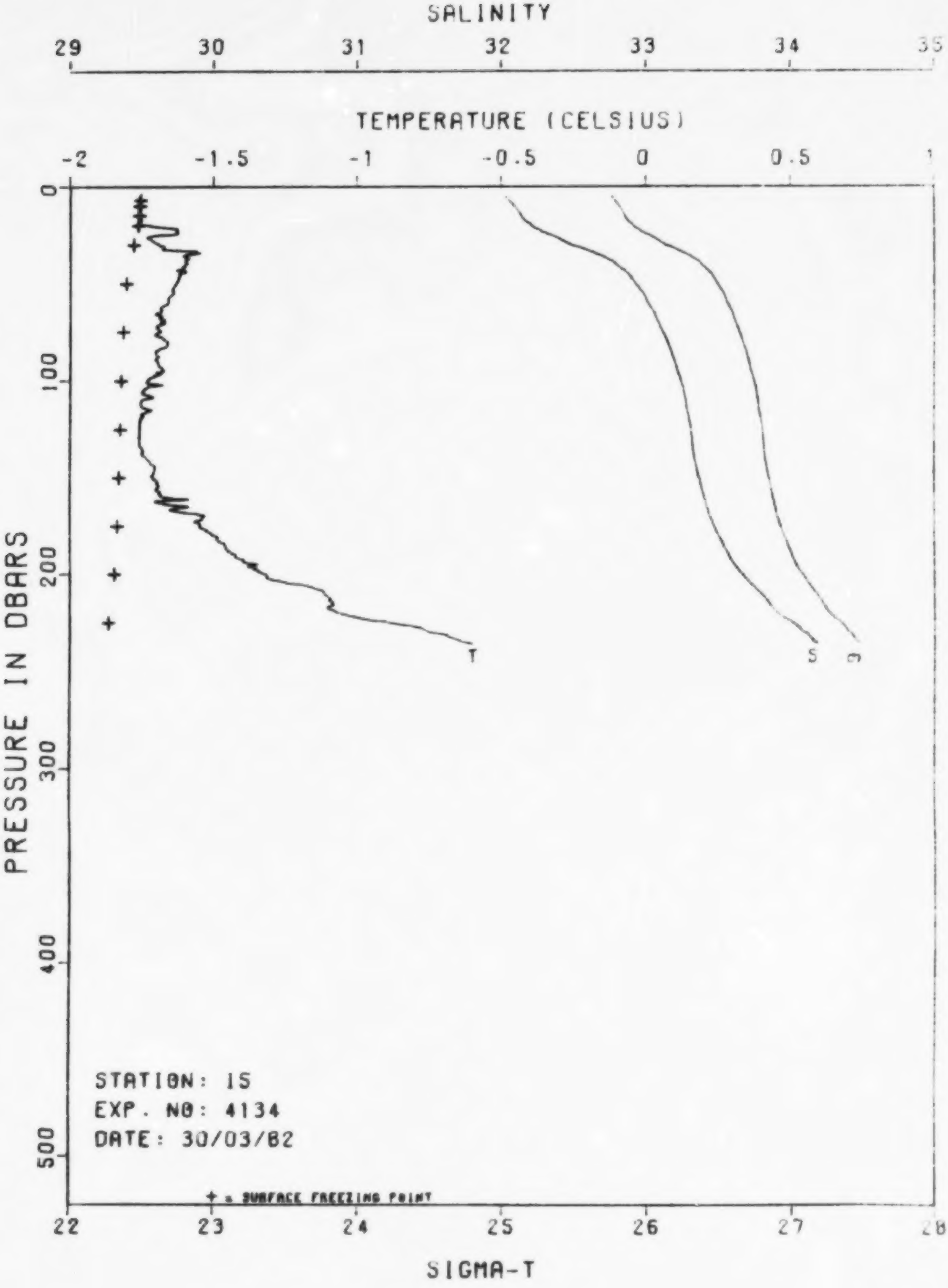
SIGMA-T


SALINITY
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35
TEMPERATURE (CELSIUS)
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-1.5
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-0.5
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PRESSURE IN DBARS
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STATION: 15
EXP. NO: 4134
DATE: 30/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE C15-82-022 ARCTIC ISLANDS-82 SITE 15 EXPERIMENT #134

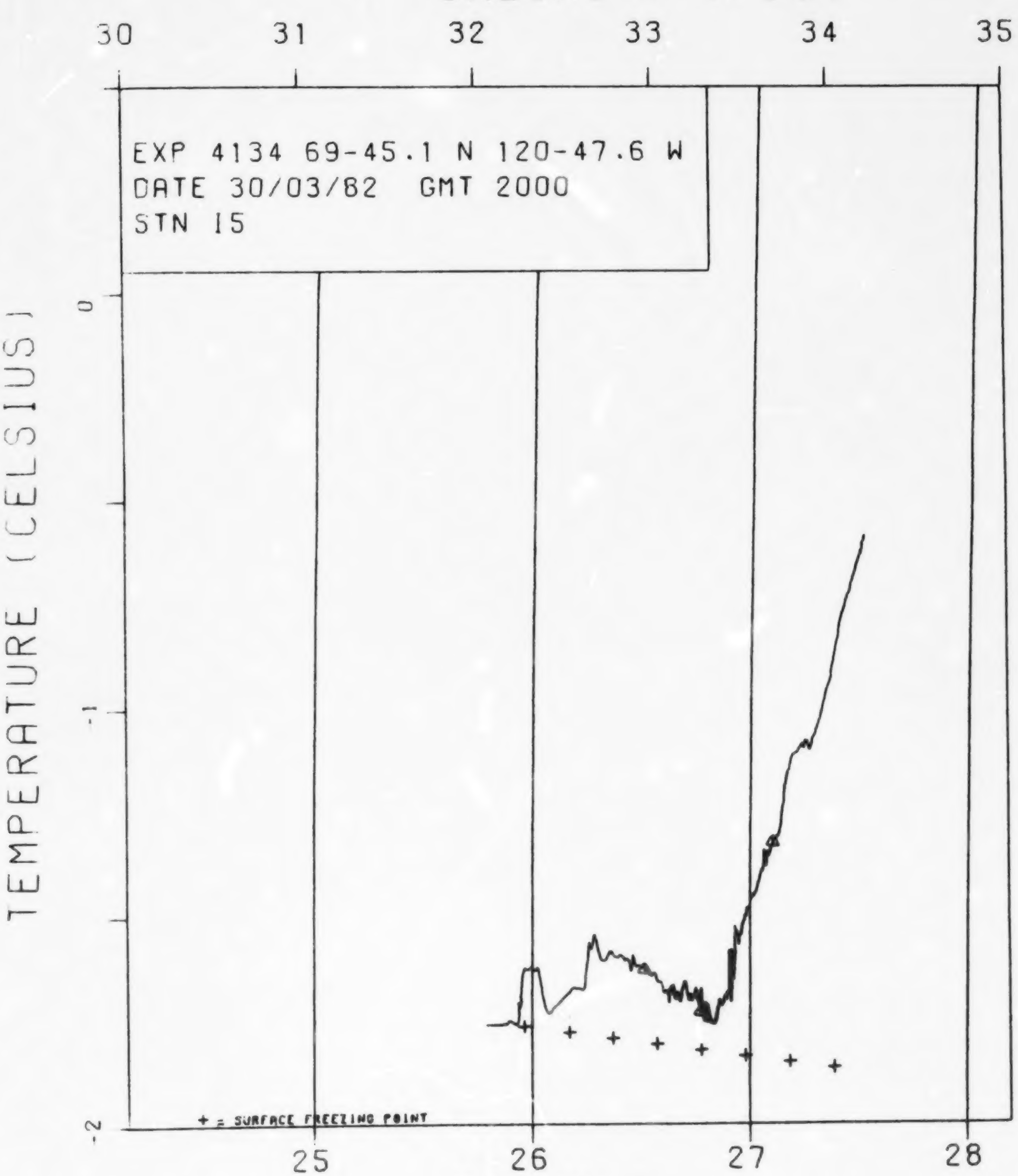
LAT.N. 69-45- 5 LON.W. 120-47-35 DATE 30/ 3/82 G.M.T. 2000

ICE THICKNESS 1.5 M WATER DEPTH 239 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.760	.59205	32.032	25.767	.012	1437.0
6.0	-1.761	.59222	32.043	25.776	.013	1437.0
7.0	-1.761	.59244	32.055	25.786	.016	1437.1
8.0	-1.761	.59264	32.066	25.795	.018	1437.1
9.0	-1.761	.59286	32.079	25.805	.020	1437.1
10.0	-1.761	.59309	32.091	25.815	.022	1437.2
11.0	-1.761	.59333	32.105	25.826	.024	1437.2
12.0	-1.761	.59351	32.116	25.835	.027	1437.2
13.0	-1.760	.59366	32.124	25.842	.029	1437.3
14.0	-1.759	.59386	32.133	25.850	.031	1437.3
15.0	-1.759	.59401	32.142	25.856	.033	1437.3
16.0	-1.756	.59416	32.148	25.861	.035	1437.4
17.0	-1.750	.59446	32.159	25.870	.037	1437.4
18.0	-1.752	.59470	32.173	25.882	.039	1437.5
19.0	-1.760	.59491	32.194	25.899	.041	1437.5
20.0	-1.720	.59600	32.214	25.914	.044	1437.7
21.0	-1.679	.59700	32.228	25.925	.046	1437.9
22.0	-1.623	.59642	32.251	25.942	.048	1438.2
23.0	-1.625	.59888	32.279	25.965	.050	1438.3
24.0	-1.632	.59924	32.308	25.989	.052	1438.3
25.0	-1.682	.59697	32.346	26.021	.054	1438.2
27.5	-1.717	.59957	32.418	26.080	.059	1438.1
30.0	-1.688	.60123	32.464	26.133	.063	1438.4
32.5	-1.679	.60301	32.578	26.209	.068	1438.6
35.0	-1.588	.60625	32.668	26.280	.072	1439.2
37.5	-1.592	.60754	32.738	26.336	.077	1439.4
40.0	-1.591	.60832	32.792	26.381	.081	1439.5
42.5	-1.603	.60884	32.835	26.416	.085	1439.5
45.0	-1.625	.60924	32.880	26.453	.089	1439.5
47.5	-1.621	.60973	32.903	26.472	.093	1439.6
50.0	-1.632	.60999	32.930	26.494	.096	1439.6
55.0	-1.637	.61087	32.964	26.536	.104	1439.8
60.0	-1.657	.61102	33.017	26.561	.111	1439.8
65.0	-1.689	.61123	33.058	26.599	.118	1439.8
70.0	-1.676	.61201	33.088	26.624	.125	1440.0
75.0	-1.684	.61244	33.117	26.647	.132	1440.0
80.0	-1.662	.61344	33.149	26.673	.139	1440.3
85.0	-1.707	.61314	33.178	26.696	.146	1440.2
90.0	-1.704	.61360	33.200	26.715	.153	1440.3
95.0	-1.672	.61456	33.218	26.729	.159	1440.6
100.0	-1.733	.61387	33.242	26.750	.165	1440.4
105.0	-1.747	.61399	33.262	26.766	.172	1440.4
110.0	-1.755	.61415	33.277	26.779	.178	1440.5
115.0	-1.714	.61506	33.283	26.783	.184	1440.8

SITE 15 EXPERIMENT 4134

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.759	.61460	33.302	26.799	.191	1440.7
125.0	-1.758	.61485	33.313	26.808	.197	1440.8
130.0	-1.760	.61501	33.321	26.815	.203	1440.9
135.0	-1.750	.61533	33.326	26.818	.209	1441.0
140.0	-1.734	.61585	33.336	26.827	.215	1441.2
145.0	-1.700	.61679	33.351	26.838	.221	1441.4
150.0	-1.714	.61684	33.366	26.850	.227	1441.5
155.0	-1.696	.61758	33.387	26.867	.233	1441.7
160.0	-1.682	.61617	33.404	26.880	.238	1441.9
165.0	-1.593	.62020	33.421	26.892	.244	1442.4
170.0	-1.529	.62142	33.442	26.907	.250	1442.8
175.0	-1.544	.62210	33.472	26.932	.255	1442.9
180.0	-1.506	.62341	33.504	26.957	.261	1443.2
185.0	-1.457	.62494	33.537	26.982	.266	1443.5
190.0	-1.420	.62632	33.573	27.011	.271	1443.8
195.0	-1.339	.62853	33.610	27.038	.276	1444.3
200.0	-1.318	.62998	33.669	27.085	.281	1444.6
210.0	-1.109	.63619	33.742	27.178	.290	1445.9
220.0	-1.063	.63914	33.906	27.269	.299	1446.5
230.0	-.740	.64858	34.086	27.402	.306	1448.4
236.1	-.584	.65355	34.194	27.483	.310	1449.4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31
32
33
34
35
EXP 4134 69-45.1 N 120-47.6 W
DATE 30/03/82 GMT 2000
STN 15
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
25
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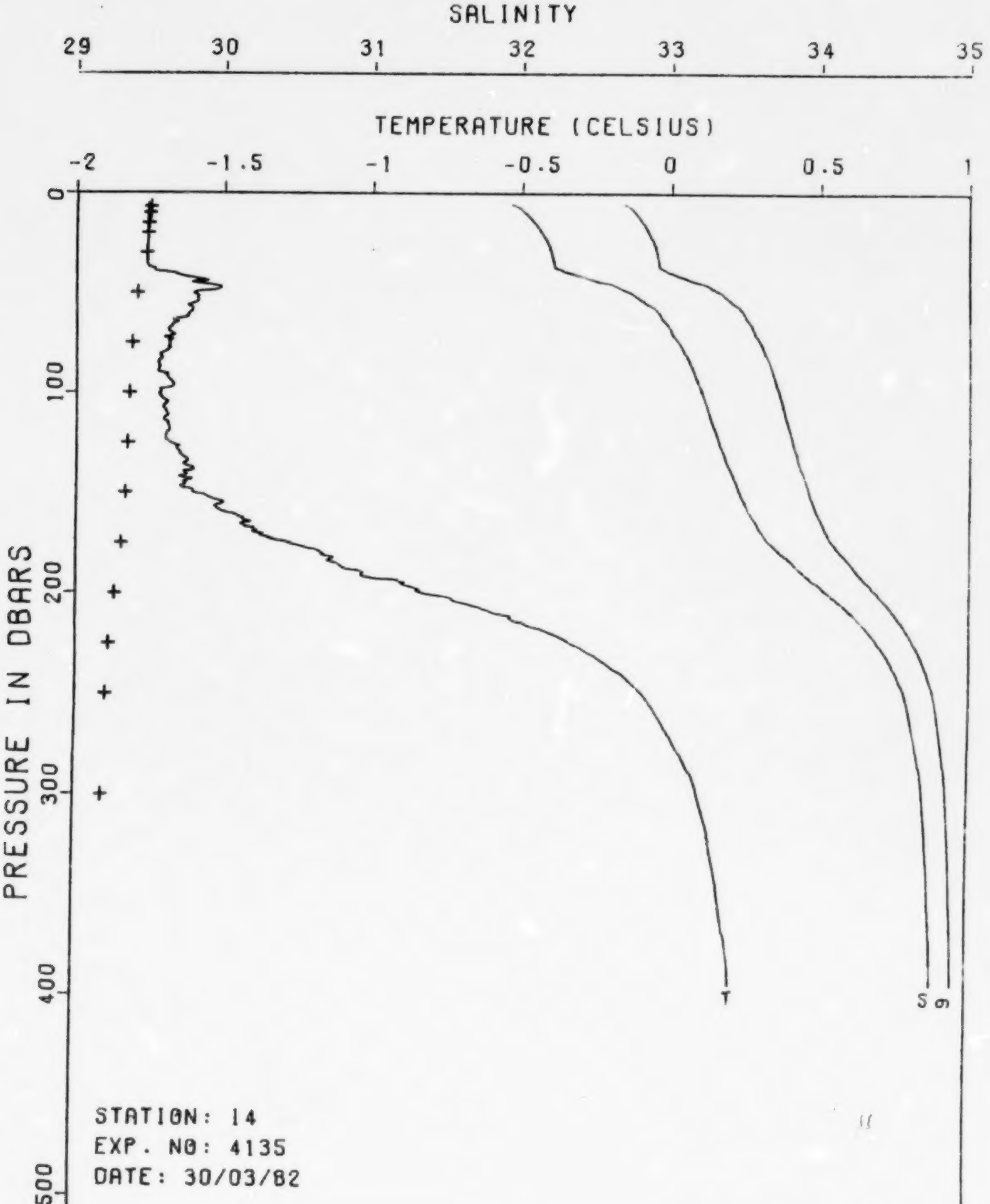
SIGMA-T


SALINITY
29
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31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
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PRESSURE IN DBARS
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STATION: 14
EXP. NO: 4135
DATE: 30/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE 14 EXPERIMENT 4135

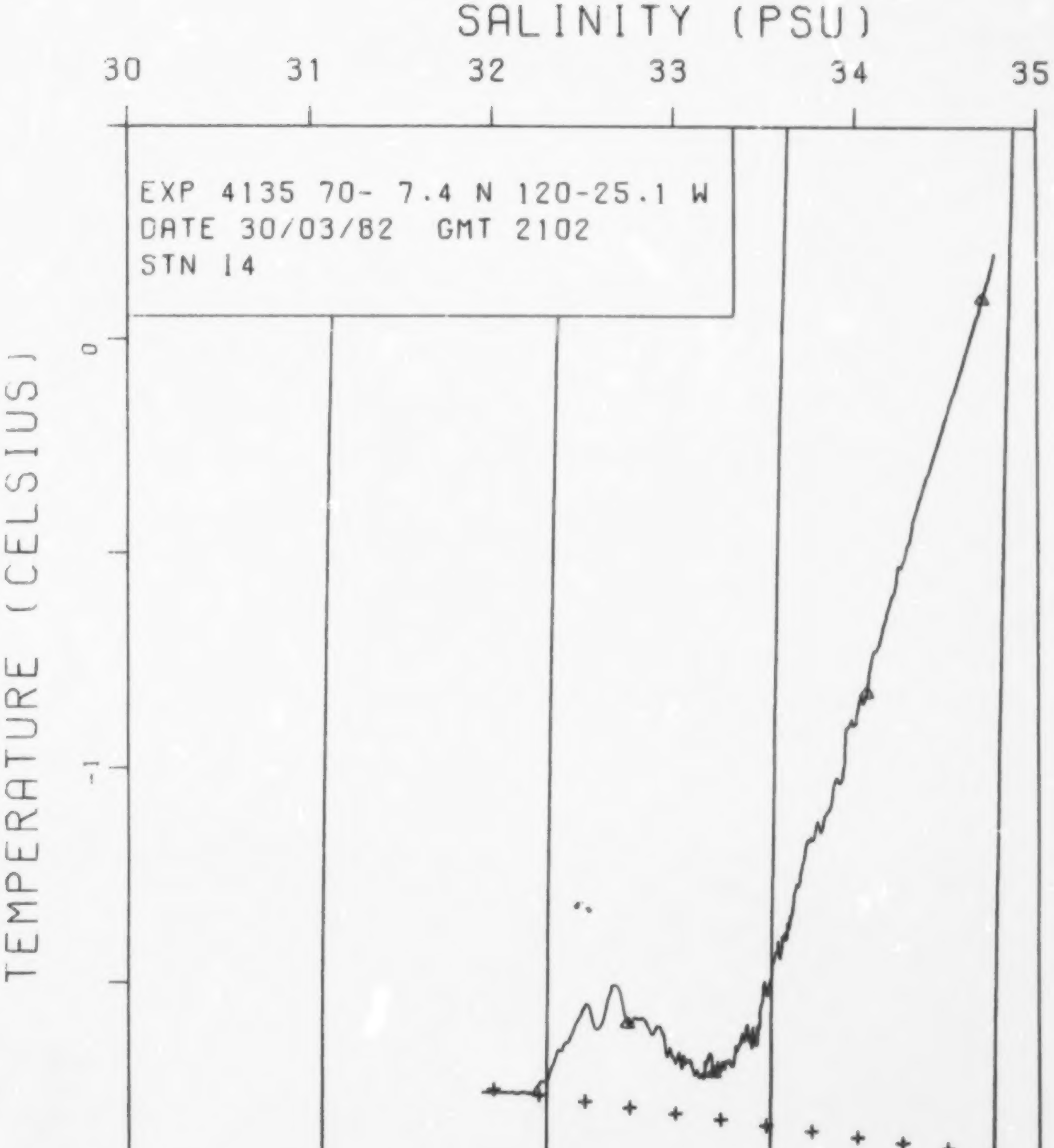
LAT.N. 70- 7-23 LON.W. 120-25- 5 DATE 30/ 3/82 G.M.T. 2102

ICE THICKNESS 1.4 M WATER DEPTH 394 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.4	-1.758	.59041	31.932	25.686	.013	1436.9
6.0	-1.756	.59071	31.949	25.699	.014	1436.9
7.0	-1.759	.59120	31.978	25.723	.016	1437.0
8.0	-1.759	.59151	31.997	25.739	.019	1437.0
9.0	-1.759	.59173	32.009	25.748	.021	1437.1
10.0	-1.759	.59199	32.024	25.761	.023	1437.1
11.0	-1.759	.59222	32.037	25.771	.025	1437.1
12.0	-1.759	.59245	32.051	25.782	.028	1437.2
13.0	-1.760	.59268	32.064	25.793	.030	1437.2
14.0	-1.758	.59291	32.076	25.803	.032	1437.2
15.0	-1.759	.59311	32.087	25.812	.034	1437.3
16.0	-1.759	.59331	32.099	25.821	.036	1437.3
17.0	-1.761	.59344	32.108	25.829	.038	1437.3
18.0	-1.761	.59358	32.116	25.836	.041	1437.3
19.0	-1.761	.59371	32.123	25.841	.043	1437.4
20.0	-1.760	.59392	32.134	25.850	.045	1437.4
21.0	-1.758	.59412	32.143	25.857	.047	1437.4
22.0	-1.758	.59425	32.150	25.863	.049	1437.5
23.0	-1.759	.59442	32.161	25.872	.051	1437.5
24.0	-1.760	.59455	32.168	25.876	.053	1437.5
25.0	-1.760	.59469	32.176	25.884	.055	1437.5
27.5	-1.761	.59492	32.189	25.895	.061	1437.6
30.0	-1.761	.59509	32.199	25.903	.066	1437.6
32.5	-1.761	.59529	32.209	25.911	.071	1437.7
35.0	-1.762	.59541	32.215	25.916	.076	1437.8
37.5	-1.749	.59584	32.226	25.924	.082	1437.9
40.0	-1.676	.59907	32.336	26.013	.087	1438.4
42.5	-1.606	.60218	32.443	26.098	.091	1438.9
45.0	-1.610	.60442	32.578	26.207	.096	1439.1
47.5	-1.506	.60776	32.661	26.272	.100	1439.8
50.0	-1.603	.60733	32.740	26.339	.105	1439.5
55.0	-1.592	.60914	32.832	26.413	.113	1439.8
60.0	-1.614	.61030	32.921	26.486	.121	1439.9
65.0	-1.657	.61034	32.969	26.526	.128	1439.8
70.0	-1.683	.61053	33.006	26.557	.136	1439.8
75.0	-1.686	.61141	33.059	26.600	.143	1440.0
80.0	-1.708	.61161	33.091	26.627	.150	1440.0
85.0	-1.726	.61192	33.128	26.657	.157	1440.0
90.0	-1.720	.61255	33.155	26.679	.164	1440.2
95.0	-1.673	.61391	33.181	26.699	.170	1440.5
100.0	-1.713	.61370	33.209	26.723	.177	1440.4
105.0	-1.687	.61462	33.232	26.741	.183	1440.7
110.0	-1.693	.61490	33.252	26.757	.190	1440.8
115.0	-1.686	.61546	33.274	26.775	.196	1440.9

SITE 14 EXPERIMENT 4135

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.695	.61581	33.303	26.799	.202	1441.0
125.0	-1.683	.61643	33.322	26.814	.208	1441.2
130.0	-1.646	.61769	33.352	26.838	.214	1441.5
135.0	-1.626	.61847	33.373	26.854	.220	1441.7
140.0	-1.634	.61894	33.408	26.883	.226	1441.8
145.0	-1.629	.61955	33.435	26.904	.232	1441.9
150.0	-1.610	.62041	33.462	26.926	.237	1442.1
155.0	-1.501	.62305	33.492	26.947	.243	1442.8
160.0	-1.486	.62401	33.530	26.977	.248	1443.0
165.0	-1.439	.62566	33.571	27.010	.253	1443.3
170.0	-1.380	.62758	33.615	27.044	.258	1443.7
175.0	-1.277	.63057	33.672	27.087	.263	1444.4
180.0	-1.171	.63388	33.744	27.141	.268	1445.1
185.0	-1.116	.63631	33.822	27.203	.272	1445.5
190.0	-1.026	.63927	33.890	27.255	.276	1446.1
195.0	-.902	.64328	33.982	27.325	.280	1446.9
200.0	-.818	.64632	34.061	27.386	.284	1447.5
210.0	-.580	.65374	34.216	27.501	.290	1449.0
220.0	-.389	.65980	34.344	27.596	.295	1450.2
230.0	-.260	.66412	34.440	27.667	.300	1451.1
240.0	-.159	.66748	34.512	27.720	.304	1451.8
250.0	-.089	.66992	34.566	27.761	.307	1452.4
260.0	-.043	.67151	34.598	27.784	.310	1452.8
270.0	-.001	.67294	34.627	27.805	.313	1453.2
280.0	.040	.67436	34.655	27.825	.316	1453.6
290.0	.078	.67572	34.683	27.846	.318	1454.0
300.0	.096	.67640	34.696	27.855	.321	1454.2
310.0	.115	.67712	34.709	27.865	.323	1454.5
320.0	.127	.67767	34.720	27.874	.325	1454.7
330.0	.143	.67827	34.729	27.880	.327	1455.0
340.0	.156	.67876	34.737	27.886	.330	1455.2
350.0	.165	.67916	34.743	27.890	.332	1455.4
360.0	.174	.67956	34.750	27.895	.334	1455.6
370.0	.189	.68007	34.756	27.899	.336	1455.9
380.0	.197	.68042	34.761	27.903	.338	1456.1
390.0	.203	.68066	34.762	27.903	.340	1456.3
393.7	.202	.68070	34.763	27.904	.340	1456.3


SALINITY (PSU)
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EXP 4135 70- 7.4 N 120-25.1 W
DATE 30/03/82 GMT 2102
STN 14
TEMPERATURE (CELSIUS)
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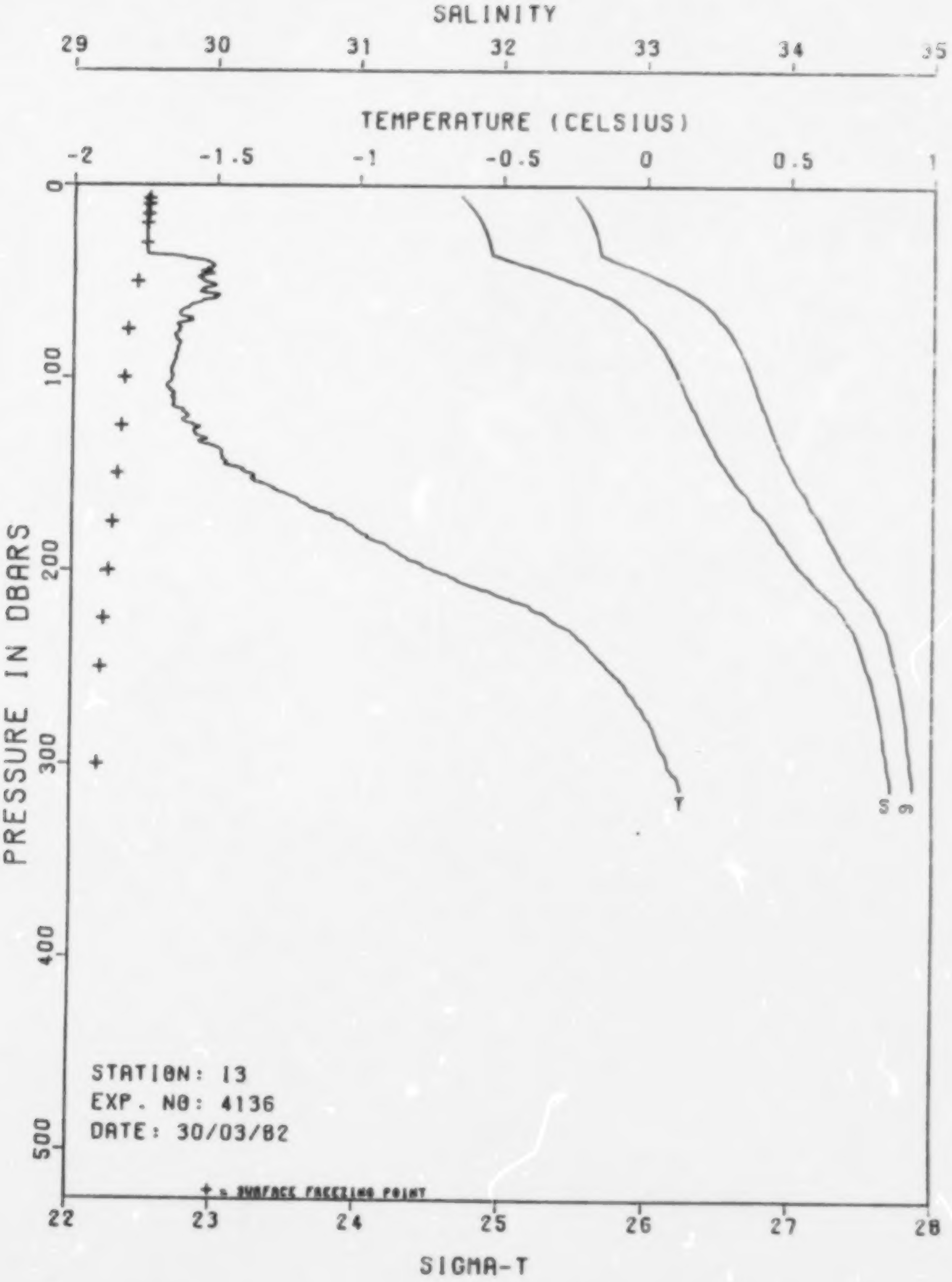
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
300
400
500
T
S
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STATION: 13
EXP. NO: 4136
DATE: 30/03/82
+ = SURFACE FREEZING POINT
22
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SIGMA-T

CRUISE 015-82-024 ARCTIC ISLANDS-82 SITE 13 EXPERIMENT 4136

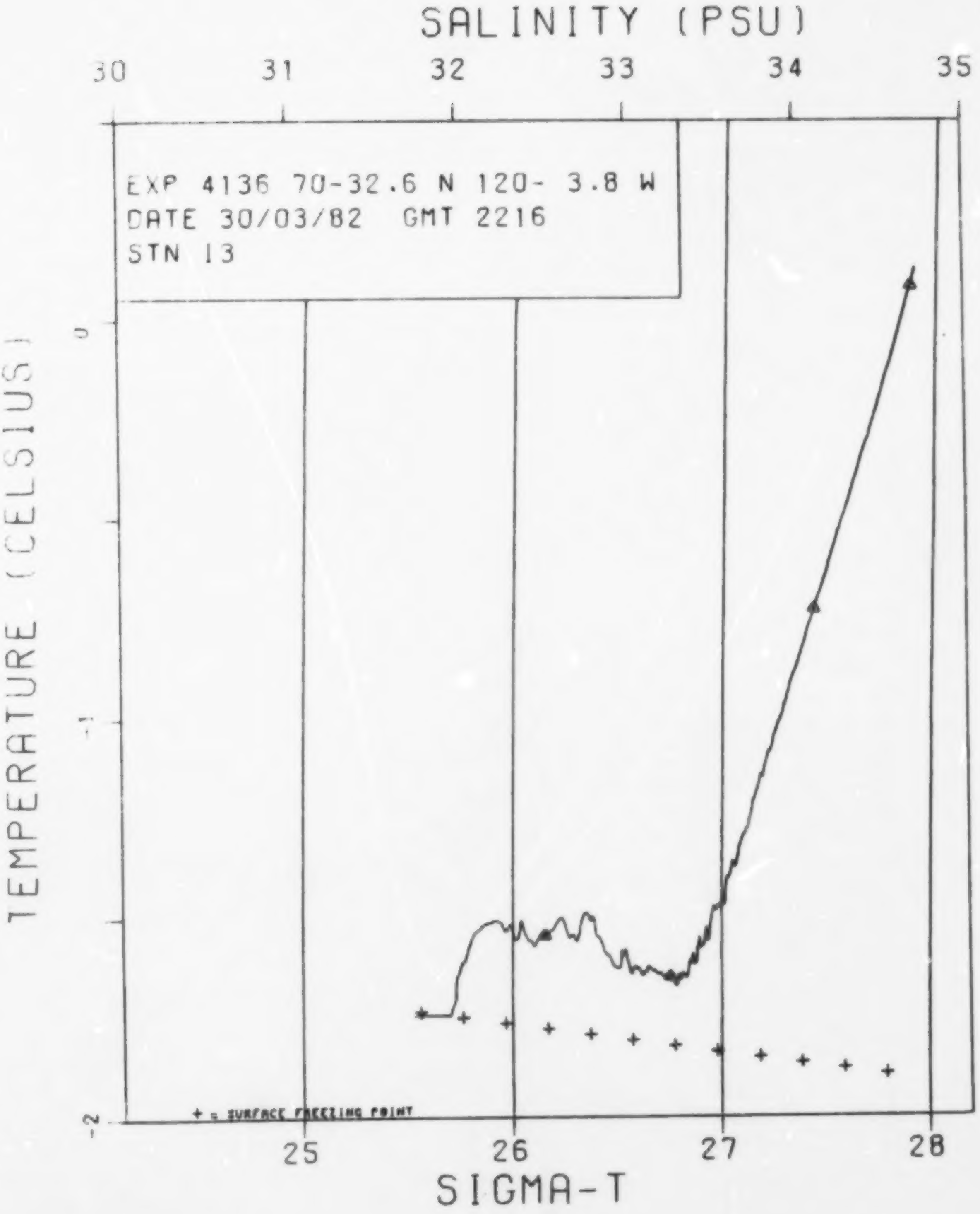
LAT.N. 70-32-35 LON.W. 120- 3-48 DATE 30/ 3/82 G.M.T. 2216

ICE THICKNESS 1.4 M WATER DEPTH 313 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.0	-1.745	.58686	31.707	25.503	.013	1436.6
6.0	-1.746	.58706	31.720	25.513	.015	1436.7
7.0	-1.745	.58726	31.730	25.521	.017	1436.7
8.0	-1.745	.58746	31.742	25.531	.020	1436.7
9.0	-1.744	.58764	31.751	25.538	.022	1436.8
10.0	-1.745	.58786	31.764	25.549	.025	1436.8
11.0	-1.745	.58806	31.775	25.558	.027	1436.8
12.0	-1.745	.58629	31.768	25.569	.030	1436.9
13.0	-1.746	.58647	31.799	25.577	.032	1436.9
14.0	-1.746	.58865	31.810	25.586	.034	1436.9
15.0	-1.746	.58883	31.819	25.594	.037	1436.9
16.0	-1.746	.58899	31.828	25.601	.039	1437.0
17.0	-1.746	.58916	31.838	25.609	.041	1437.0
18.0	-1.746	.58928	31.844	25.614	.044	1437.0
19.0	-1.745	.58941	31.851	25.620	.046	1437.1
20.0	-1.745	.58953	31.857	25.625	.049	1437.1
21.0	-1.746	.58965	31.864	25.630	.051	1437.1
22.0	-1.746	.58976	31.870	25.635	.053	1437.1
23.0	-1.746	.58987	31.876	25.640	.056	1437.2
24.0	-1.745	.58996	31.880	25.643	.058	1437.2
25.0	-1.745	.59006	31.865	25.648	.060	1437.2
27.5	-1.745	.59028	31.897	25.657	.066	1437.3
30.0	-1.745	.59047	31.906	25.665	.072	1437.3
32.5	-1.744	.59063	31.914	25.671	.078	1437.4
35.0	-1.745	.59078	31.922	25.677	.083	1437.4
37.5	-1.614	.59448	31.998	25.737	.089	1438.2
40.0	-1.529	.59776	32.099	25.817	.095	1438.8
42.5	-1.512	.60000	32.211	25.907	.100	1439.1
45.0	-1.556	.60099	32.318	25.995	.105	1439.0
47.5	-1.562	.60247	32.409	26.069	.110	1439.2
50.0	-1.545	.60420	32.491	26.135	.115	1439.4
55.0	-1.549	.60705	32.660	26.273	.124	1439.7
60.0	-1.551	.60937	32.798	26.384	.132	1440.0
65.0	-1.624	.60965	32.892	26.463	.140	1439.8
70.0	-1.586	.61148	32.955	26.513	.148	1440.2
75.0	-1.632	.61192	33.028	26.574	.155	1440.2
80.0	-1.637	.61273	33.079	26.615	.162	1440.3
85.0	-1.637	.61358	33.126	26.654	.169	1440.4
90.0	-1.639	.61416	33.161	26.681	.176	1440.6
95.0	-1.656	.61446	33.198	26.712	.182	1440.6
100.0	-1.652	.61516	33.228	26.736	.189	1440.8
105.0	-1.671	.61534	33.257	26.761	.195	1440.8
110.0	-1.660	.61608	33.286	26.784	.202	1441.0
115.0	-1.649	.61686	33.316	26.808	.208	1441.2

SITE 13 EXPERIMENT 413b

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.591	.61670	33.358	26.840	.214	1441.6
125.0	-1.576	.61958	33.390	26.866	.220	1441.8
130.0	-1.568	.62034	33.423	26.893	.225	1441.9
135.0	-1.515	.62196	33.457	26.919	.231	1442.3
140.0	-1.481	.62329	33.493	26.947	.237	1442.6
145.0	-1.461	.62451	33.540	26.985	.242	1442.8
150.0	-1.372	.62713	33.591	27.024	.247	1443.4
155.0	-1.326	.62872	33.634	27.057	.252	1443.8
160.0	-1.251	.63131	33.696	27.105	.257	1444.3
165.0	-1.191	.63324	33.738	27.137	.262	1444.7
170.0	-1.104	.63604	33.802	27.186	.266	1445.3
175.0	-1.036	.63836	33.858	27.229	.270	1445.8
180.0	-.986	.64005	33.900	27.261	.274	1446.1
185.0	-.919	.64218	33.943	27.294	.278	1446.6
190.0	-.859	.64426	33.994	27.333	.282	1447.0
195.0	-.794	.64643	34.043	27.370	.285	1447.5
200.0	-.721	.64882	34.097	27.411	.289	1448.0
210.0	-.540	.65485	34.236	27.515	.295	1449.2
220.0	-.387	.66002	34.354	27.604	.300	1450.2
230.0	-.258	.66436	34.451	27.676	.304	1451.1
240.0	-.190	.66660	34.497	27.710	.308	1451.7
250.0	-.126	.66878	34.543	27.744	.312	1452.2
260.0	-.062	.67100	34.591	27.779	.315	1452.7
270.0	-.012	.67267	34.624	27.803	.318	1453.1
280.0	.031	.67412	34.652	27.823	.321	1453.5
290.0	.053	.67493	34.666	27.834	.323	1453.8
300.0	.082	.67601	34.688	27.850	.326	1454.2
310.0	.124	.67740	34.714	27.864	.328	1454.6
312.6	.127	.67750	34.715	27.864	.329	1454.6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35
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DATE 30/03/82 GMT 2216
STN 13
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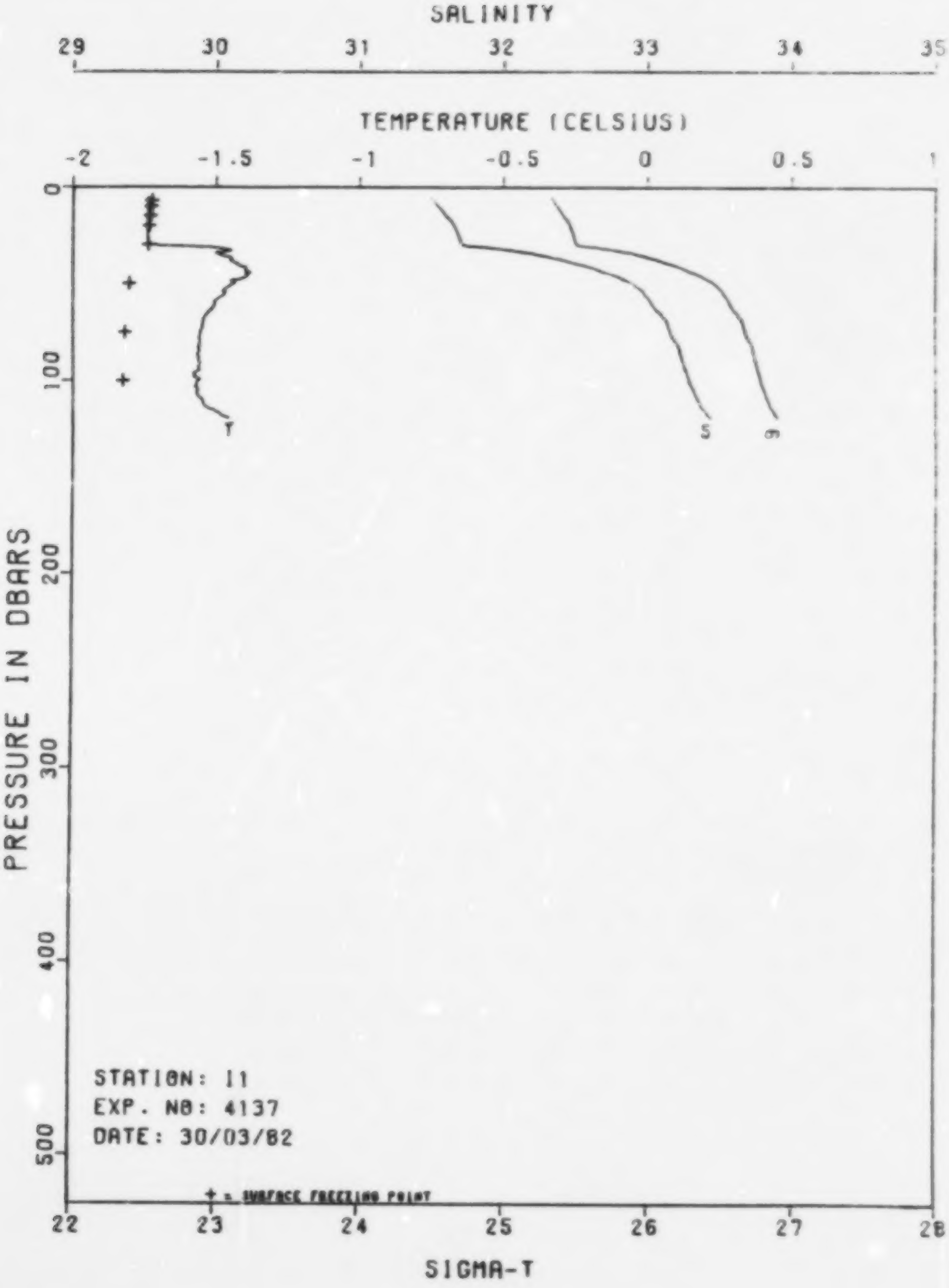
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
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33
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35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
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1
PRESSURE IN DBARS
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100
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STATION: I1
EXP. NO: 4137
DATE: 30/03/82
+ = SURFACE FREEZING POINT
22
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SIGMA-T

CRUISE C15-82-022   ARCTIC ISLANDS-82   SITE II   EXPERIMENT 4137

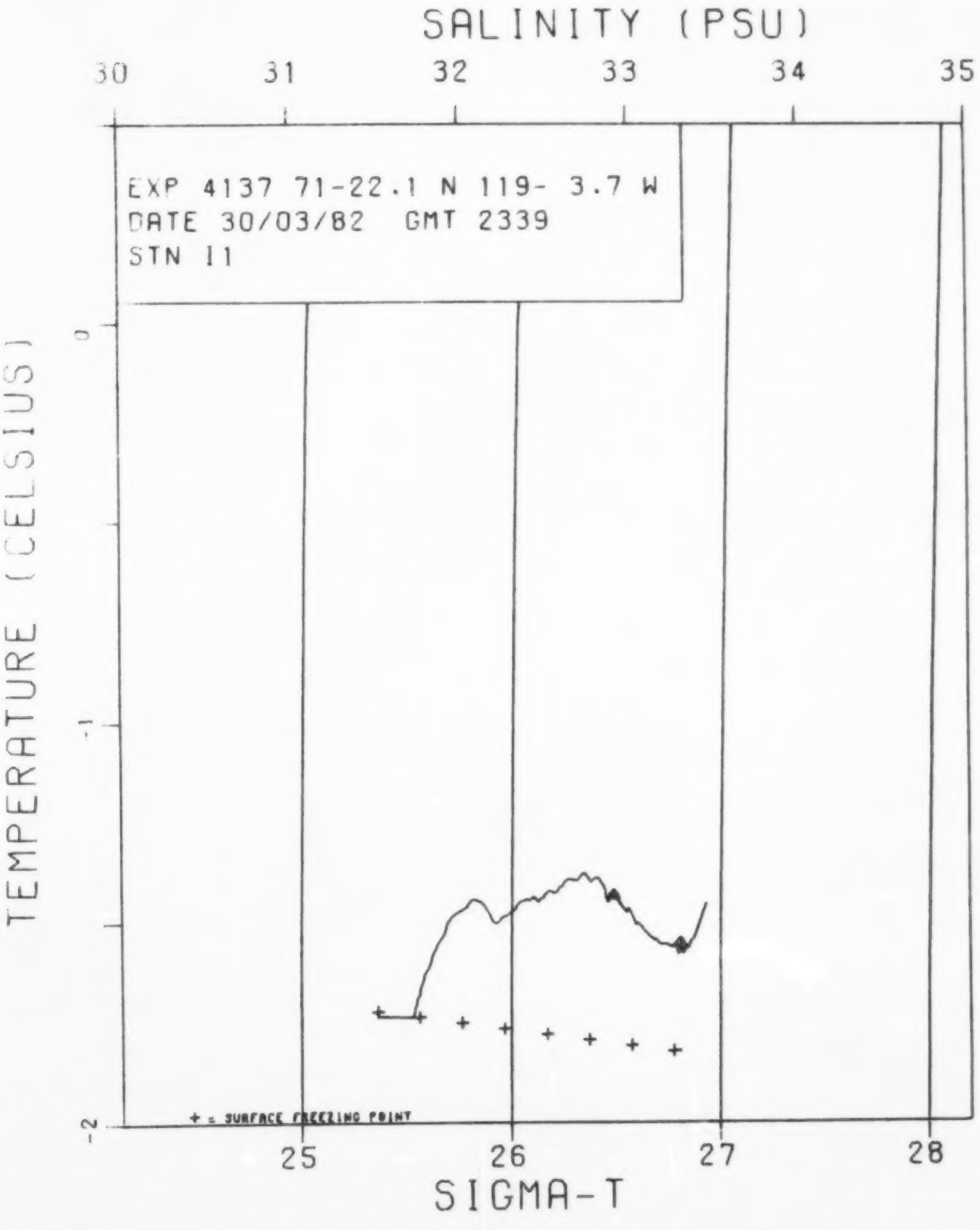
LAT.N. 71-22- 5   LON.W. 119- 3-41   DATE 30/ 3/82   G.M.T. 2339

ICE THICKNESS 1.4 M   WATER DEPTH 123 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.0	-1.737	.58352	31.500	25.335	.015	1436.4
6.0	-1.736	.58361	31.504	25.338	.016	1436.4
7.0	-1.736	.58378	31.515	25.346	.019	1436.4
8.0	-1.736	.58400	31.527	25.356	.021	1436.5
9.0	-1.736	.58420	31.538	25.365	.024	1436.5
10.0	-1.736	.58439	31.549	25.374	.026	1436.5
11.0	-1.737	.58461	31.562	25.385	.029	1436.6
12.0	-1.737	.58481	31.573	25.394	.031	1436.6
13.0	-1.737	.58502	31.585	25.403	.034	1436.6
14.0	-1.736	.58520	31.594	25.411	.037	1436.7
15.0	-1.736	.58536	31.604	25.418	.039	1436.7
16.0	-1.737	.58555	31.614	25.427	.042	1436.7
17.0	-1.738	.58589	31.636	25.445	.044	1436.8
18.0	-1.736	.58604	31.644	25.451	.047	1436.8
19.0	-1.739	.58622	31.654	25.460	.049	1436.8
20.0	-1.739	.58634	31.661	25.465	.052	1436.8
21.0	-1.736	.58646	31.668	25.471	.054	1436.9
22.0	-1.738	.58662	31.675	25.476	.057	1436.9
23.0	-1.737	.58672	31.680	25.481	.059	1436.9
24.0	-1.736	.58682	31.686	25.485	.062	1436.9
25.0	-1.738	.58692	31.691	25.490	.064	1437.0
27.5	-1.738	.58714	31.703	25.499	.070	1437.0
30.0	-1.718	.58781	31.720	25.513	.077	1437.2
32.5	-1.461	.59776	32.031	25.759	.082	1438.9
35.0	-1.487	.60083	32.238	25.926	.088	1439.1
37.5	-1.446	.60440	32.403	26.061	.093	1439.6
40.0	-1.422	.60702	32.529	26.163	.097	1439.9
42.5	-1.393	.60954	32.644	26.256	.102	1440.2
45.0	-1.390	.61133	32.745	26.338	.106	1440.4
47.5	-1.406	.61252	32.834	26.410	.110	1440.5
50.0	-1.437	.61313	32.900	26.465	.114	1440.5
55.0	-1.465	.61400	32.979	26.529	.122	1440.6
60.0	-1.505	.61415	33.030	26.572	.129	1440.5
65.0	-1.528	.61474	33.067	26.619	.136	1440.6
70.0	-1.546	.61538	33.141	26.663	.143	1440.7
75.0	-1.554	.61564	33.162	26.681	.150	1440.7
80.0	-1.556	.61631	33.201	26.712	.157	1440.9
85.0	-1.561	.61673	33.229	26.735	.163	1441.0
90.0	-1.563	.61705	33.247	26.750	.170	1441.0
95.0	-1.557	.61759	33.269	26.767	.176	1441.2
100.0	-1.559	.61795	33.290	26.785	.182	1441.3
105.0	-1.559	.61856	33.323	26.811	.188	1441.4
110.0	-1.546	.61935	33.352	26.834	.194	1441.6
115.0	-1.516	.62060	33.390	26.864	.200	1441.9

SITE 11 EXPERIMENT 4137

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
119.4	-1.453	.62276	33.445	26.907	.206	1442.3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33
34
35
EXP 4137 71-22.1 N 119- 3.7 W
DATE 30/03/82 GMT 2339
STN I1
TEMPERATURE (CELSIUS)
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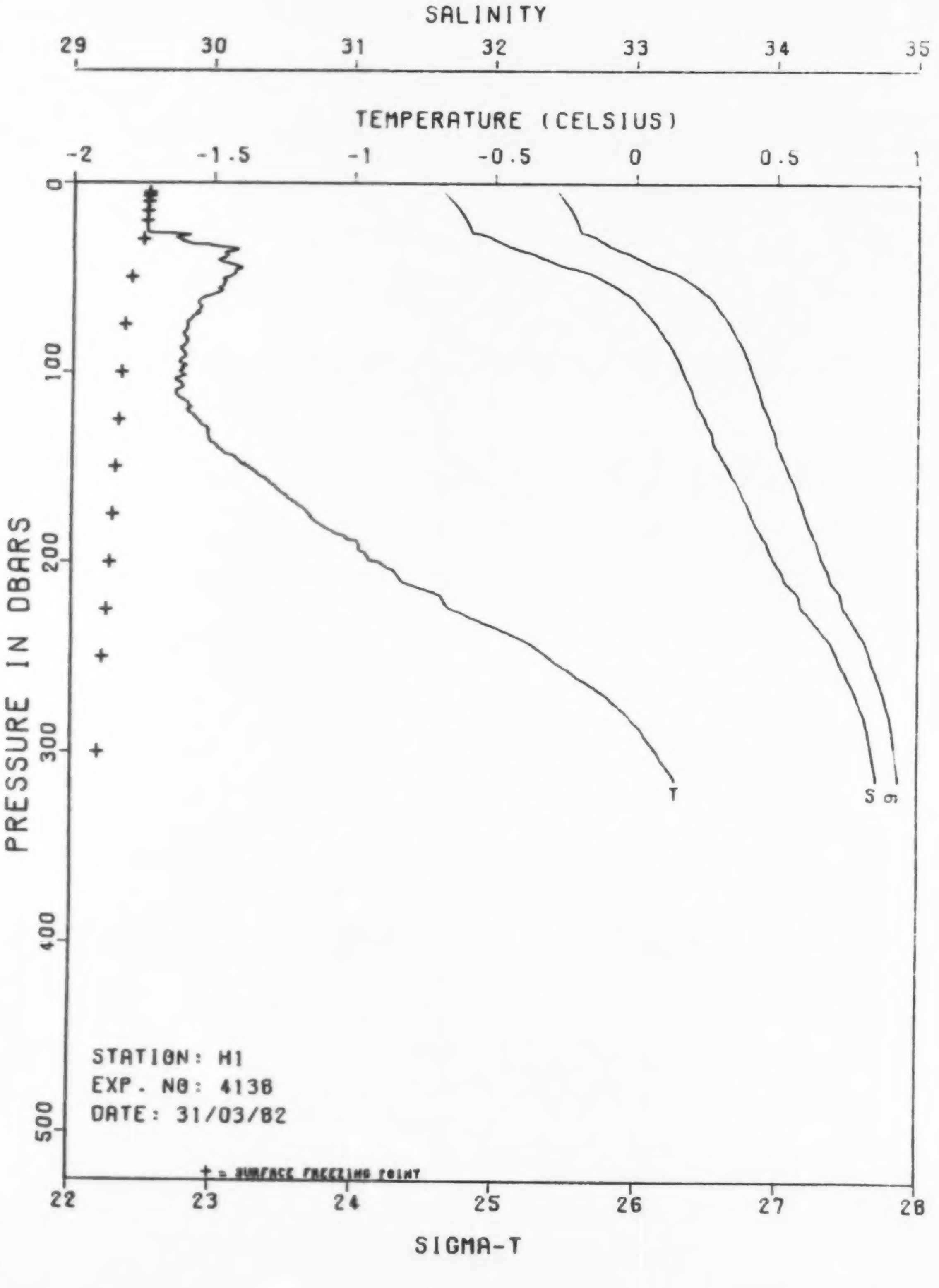
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
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100
200
300
400
500
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STATION: H1
EXP. NO: 4138
DATE: 31/03/82
+ = SURFACE FREEZING POINT
22
23
24
25
26
27
28
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE H1 EXPERIMENT 4138

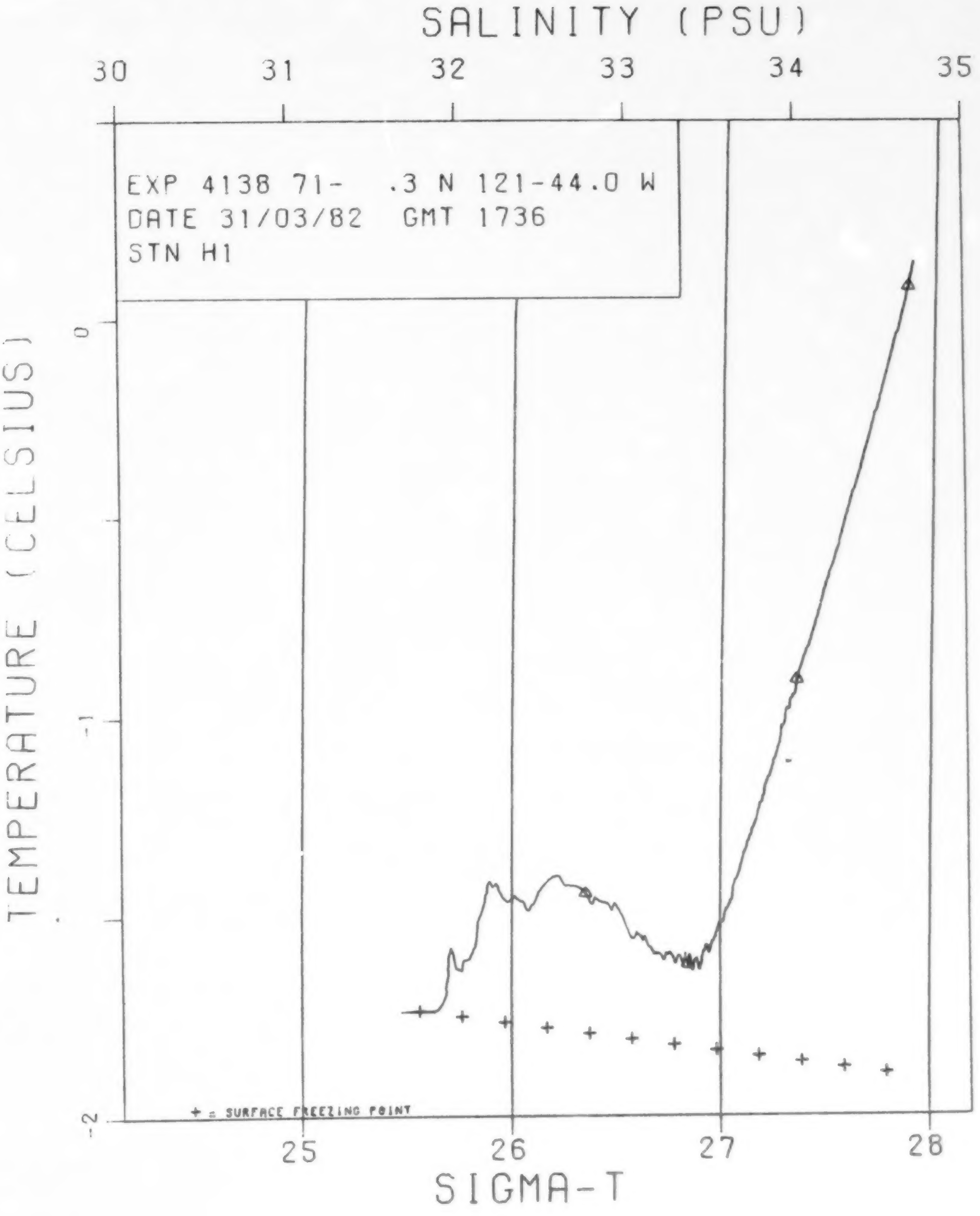
LAT.N. 71- 0-18 LON.W. 121-44- 0 DATE 31/ 3/82 G.M.T. 1736

ICE THICKNESS 1.4 M WATER DEPTH 316 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.9	-1.739	.58583	31.640	25.448	.013	1436.6
5.0	-1.739	.58585	31.641	25.449	.013	1436.6
6.0	-1.739	.58608	31.654	25.460	.015	1436.6
7.0	-1.739	.58631	31.667	25.470	.018	1436.6
8.0	-1.739	.58652	31.679	25.480	.020	1436.7
9.0	-1.739	.58675	31.692	25.490	.023	1436.7
10.0	-1.739	.58695	31.703	25.499	.025	1436.7
11.0	-1.739	.58719	31.717	25.511	.028	1436.8
12.0	-1.739	.58739	31.728	25.520	.030	1436.8
13.0	-1.736	.58759	31.739	25.529	.033	1436.8
14.0	-1.739	.58778	31.751	25.538	.035	1436.9
15.0	-1.738	.58795	31.759	25.545	.037	1436.9
16.0	-1.738	.58813	31.769	25.553	.040	1436.9
17.0	-1.739	.58830	31.779	25.561	.042	1437.0
18.0	-1.739	.58842	31.786	25.566	.045	1437.0
19.0	-1.739	.58856	31.794	25.573	.047	1437.0
20.0	-1.739	.58870	31.801	25.579	.049	1437.0
21.0	-1.739	.58883	31.809	25.585	.052	1437.1
22.0	-1.738	.58896	31.815	25.590	.054	1437.1
23.0	-1.739	.58909	31.822	25.596	.057	1437.1
24.0	-1.736	.58918	31.827	25.600	.059	1437.1
25.0	-1.739	.58928	31.832	25.605	.061	1437.2
27.5	-1.599	.59331	31.919	25.672	.067	1438.0
30.0	-1.619	.59437	32.003	25.740	.073	1438.0
32.5	-1.577	.59636	32.074	25.797	.078	1438.4
35.0	-1.411	.60095	32.163	25.866	.084	1439.3
37.5	-1.465	.60186	32.274	25.957	.089	1439.3
40.0	-1.463	.60334	32.357	26.024	.094	1439.5
42.5	-1.458	.60482	32.437	26.089	.099	1439.6
45.0	-1.398	.60799	32.557	26.185	.104	1440.1
47.5	-1.425	.60949	32.674	26.281	.108	1440.2
50.0	-1.448	.61022	32.740	26.335	.112	1440.2
55.0	-1.470	.61196	32.864	26.436	.120	1440.4
60.0	-1.522	.61275	32.965	26.520	.128	1440.4
65.0	-1.547	.61340	33.029	26.572	.135	1440.4
70.0	-1.568	.61412	33.091	26.623	.143	1440.5
75.0	-1.596	.61457	33.147	26.669	.149	1440.5
80.0	-1.612	.61508	33.190	26.705	.156	1440.6
85.0	-1.600	.61616	33.238	26.744	.163	1440.8
90.0	-1.604	.61674	33.275	26.773	.169	1440.9
95.0	-1.624	.61698	33.308	26.801	.175	1440.9
100.0	-1.623	.61752	33.336	26.824	.181	1441.1
105.0	-1.627	.61801	33.366	26.848	.187	1441.2
110.0	-1.637	.61845	33.401	26.877	.193	1441.2

SITE H1 EXPERIMENT 4136

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.599	.61953	33.419	26.890	.199	1441.5
120.0	-1.596	.62029	33.458	26.922	.205	1441.7
125.0	-1.556	.62168	33.492	26.946	.210	1442.0
130.0	-1.520	.62299	33.526	26.975	.215	1442.3
135.0	-1.515	.62346	33.545	26.991	.221	1442.4
140.0	-1.484	.62453	33.570	27.010	.226	1442.7
145.0	-1.416	.62654	33.612	27.042	.231	1443.1
150.0	-1.370	.62819	33.652	27.073	.236	1443.5
155.0	-1.330	.62961	33.687	27.101	.241	1443.8
160.0	-1.278	.63133	33.727	27.131	.245	1444.2
165.0	-1.237	.63268	33.757	27.154	.250	1444.5
170.0	-1.196	.63409	33.792	27.181	.254	1444.9
175.0	-1.153	.63543	33.818	27.201	.259	1445.2
180.0	-1.116	.63673	33.849	27.225	.263	1445.5
185.0	-1.054	.63870	33.892	27.258	.267	1445.9
190.0	-.981	.64085	33.932	27.287	.271	1446.4
195.0	-.953	.64184	33.956	27.306	.275	1446.6
200.0	-.903	.64353	33.994	27.335	.278	1447.0
210.0	-.823	.64640	34.065	27.389	.285	1447.6
220.0	-.676	.65099	34.160	27.460	.291	1448.6
230.0	-.562	.65491	34.251	27.528	.297	1449.4
240.0	-.403	.66010	34.364	27.613	.302	1450.5
250.0	-.300	.66339	34.432	27.663	.307	1451.2
260.0	-.205	.66654	34.498	27.711	.311	1451.9
270.0	-.100	.66990	34.565	27.761	.314	1452.7
280.0	-.025	.67242	34.618	27.799	.317	1453.2
290.0	.032	.67427	34.652	27.824	.320	1453.7
300.0	.082	.67583	34.679	27.842	.322	1454.1
310.0	.128	.67725	34.702	27.859	.325	1454.5
314.7	.145	.67778	34.710	27.864	.326	1454.7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DATE 31/03/82 GMT 1736
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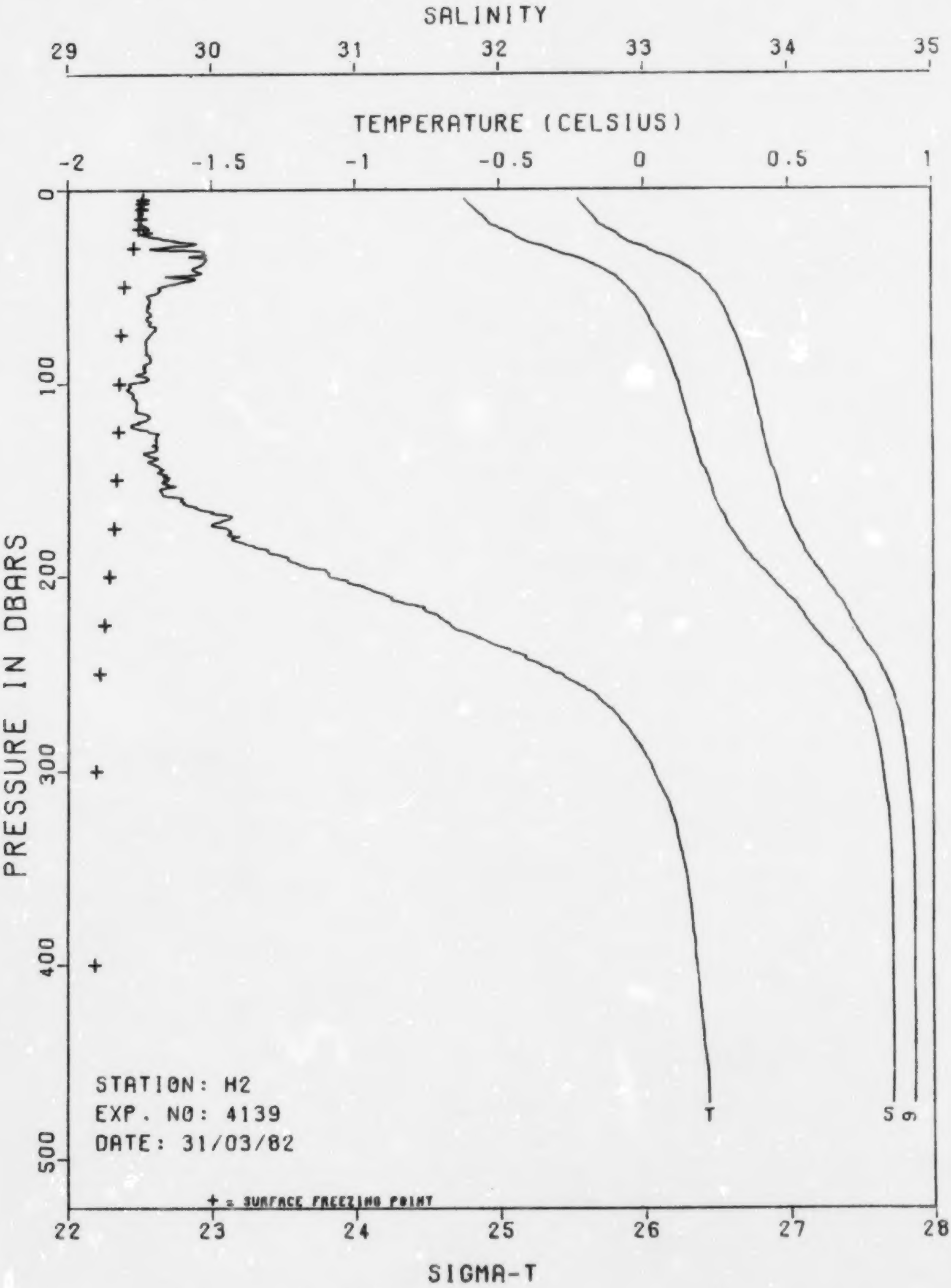
SIGMA-T


SALINITY
29
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
0
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200
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500
STATION: H2
EXP. NO: 4139
DATE: 31/03/82
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+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE H2 EXPERIMENT 4139

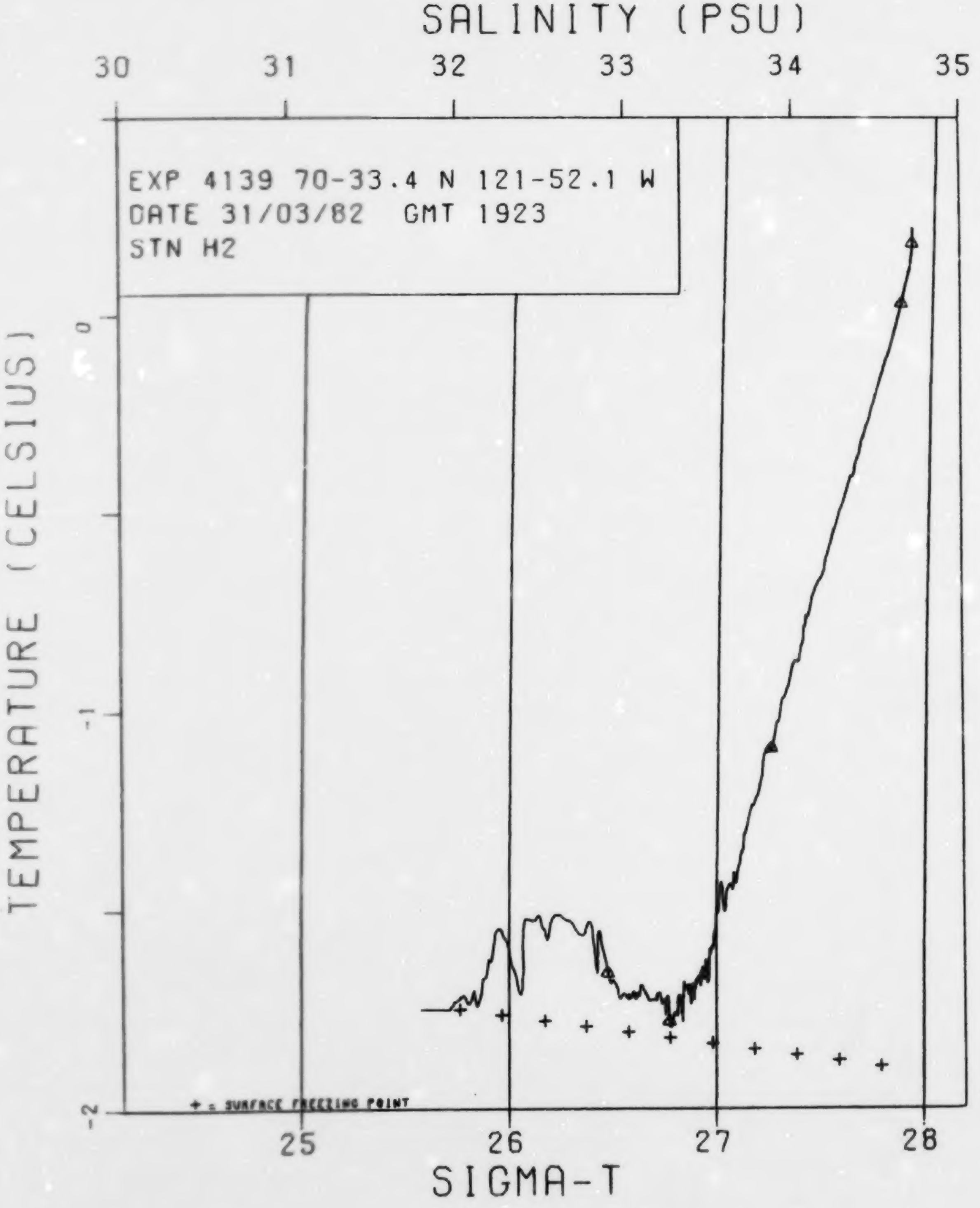
LAT.N. 70-33-24 LON.W. 121-52- 5 DATE 31/ 3/82 G.M.T. 1923

ICE THICKNESS 1.5 M WATER DEPTH 470 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.9	-1.751	.58766	31.763	25.548	.012	1436.7
5.0	-1.752	.58769	31.764	25.549	.012	1436.7
6.0	-1.752	.58789	31.775	25.556	.015	1436.7
7.0	-1.752	.58810	31.787	25.568	.017	1436.7
8.0	-1.751	.58833	31.800	25.578	.019	1436.8
9.0	-1.753	.58861	31.817	25.592	.022	1436.8
10.0	-1.753	.58889	31.833	25.605	.024	1436.8
11.0	-1.752	.58912	31.846	25.615	.027	1436.9
12.0	-1.753	.58941	31.863	25.629	.029	1436.9
13.0	-1.753	.58961	31.874	25.639	.031	1437.0
14.0	-1.753	.58998	31.895	25.656	.034	1437.0
15.0	-1.754	.59018	31.908	25.666	.036	1437.0
16.0	-1.752	.59041	31.920	25.676	.038	1437.1
17.0	-1.753	.59060	31.930	25.684	.041	1437.1
18.0	-1.750	.59083	31.941	25.693	.043	1437.1
19.0	-1.729	.59175	31.973	25.718	.045	1437.3
20.0	-1.718	.59247	32.002	25.742	.047	1437.4
21.0	-1.730	.59281	32.035	25.769	.050	1437.4
22.0	-1.713	.59372	32.070	25.797	.052	1437.6
23.0	-1.746	.59361	32.098	25.821	.054	1437.5
24.0	-1.714	.59455	32.119	25.837	.056	1437.7
25.0	-1.673	.59552	32.132	25.847	.058	1437.9
27.5	-1.574	.59859	32.205	25.903	.064	1438.5
30.0	-1.669	.59902	32.331	26.008	.069	1438.3
32.5	-1.526	.60310	32.416	26.074	.074	1439.1
35.0	-1.554	.60456	32.531	26.168	.078	1439.2
37.5	-1.523	.60659	32.616	26.236	.083	1439.5
40.0	-1.548	.60731	32.685	26.293	.087	1439.5
42.5	-1.544	.60854	32.752	26.347	.091	1439.7
45.0	-1.655	.60753	32.812	26.399	.095	1439.3
47.5	-1.591	.60930	32.845	26.424	.099	1439.7
50.0	-1.669	.60847	32.880	26.454	.103	1439.4
55.0	-1.726	.60859	32.948	26.511	.111	1439.3
60.0	-1.722	.60945	32.991	26.546	.119	1439.4
65.0	-1.707	.61046	33.031	26.578	.126	1439.7
70.0	-1.718	.61082	33.062	26.603	.133	1439.7
75.0	-1.713	.61169	33.105	26.638	.140	1439.9
80.0	-1.724	.61192	33.134	26.662	.147	1439.9
85.0	-1.730	.61247	33.164	26.687	.154	1440.1
90.0	-1.732	.61302	33.196	26.712	.160	1440.2
95.0	-1.751	.61304	33.216	26.730	.167	1440.2
100.0	-1.789	.61284	33.243	26.752	.173	1440.1
105.0	-1.773	.61341	33.257	26.763	.180	1440.3
110.0	-1.759	.61405	33.276	26.778	.186	1440.5

SITE H2   EXPERIMENT 4139

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.761	.61433	33.291	26.790	.192	1440.6
120.0	-1.760	.61479	33.315	26.810	.198	1440.7
125.0	-1.720	.61576	33.324	26.817	.204	1441.0
130.0	-1.691	.61674	33.347	26.834	.210	1441.2
135.0	-1.697	.61700	33.366	26.850	.216	1441.3
140.0	-1.724	.61692	33.388	26.869	.222	1441.3
145.0	-1.684	.61834	33.425	26.897	.228	1441.6
150.0	-1.655	.61931	33.446	26.914	.233	1441.9
155.0	-1.686	.61915	33.469	26.934	.239	1441.8
160.0	-1.600	.62111	33.486	26.945	.244	1442.4
165.0	-1.556	.62257	33.520	26.971	.250	1442.7
170.0	-1.437	.62557	33.561	27.001	.255	1443.4
175.0	-1.453	.62580	33.589	27.024	.260	1443.4
180.0	-1.418	.62730	33.636	27.061	.265	1443.8
185.0	-1.354	.62939	33.684	27.098	.270	1444.2
190.0	-1.242	.63248	33.736	27.137	.275	1444.9
195.0	-1.176	.63479	33.794	27.182	.279	1445.4
200.0	-1.093	.63759	33.862	27.234	.283	1445.9
210.0	-.895	.64369	33.987	27.328	.291	1447.2
220.0	-.716	.64928	34.106	27.417	.298	1448.4
230.0	-.597	.65342	34.205	27.493	.304	1449.2
240.0	-.432	.65882	34.324	27.582	.309	1450.3
250.0	-.297	.66340	34.428	27.659	.314	1451.2
260.0	-.176	.66734	34.511	27.720	.318	1452.1
270.0	-.102	.66990	34.568	27.763	.321	1452.7
280.0	-.047	.67175	34.604	27.789	.324	1453.1
290.0	-.002	.67323	34.632	27.810	.327	1453.5
300.0	.029	.67426	34.649	27.821	.330	1453.9
310.0	.064	.67540	34.669	27.835	.333	1454.2
320.0	.094	.67642	34.687	27.848	.335	1454.5
330.0	.112	.67707	34.698	27.856	.337	1454.8
340.0	.125	.67757	34.705	27.861	.340	1455.0
350.0	.141	.67809	34.711	27.865	.342	1455.3
360.0	.152	.67850	34.714	27.867	.344	1455.5
370.0	.162	.67882	34.715	27.867	.347	1455.7
380.0	.168	.67906	34.717	27.868	.349	1455.9
390.0	.177	.67936	34.718	27.869	.351	1456.1
400.0	.181	.67956	34.719	27.869	.353	1456.3
425.0	.196	.68014	34.719	27.869	.359	1456.8
450.0	.215	.68077	34.719	27.868	.365	1457.3
471.6	.220	.68102	34.714	27.863	.370	1457.6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EXP 4139 70-33.4 N 121-52.1 W
DATE 31/03/82 GMT 1923
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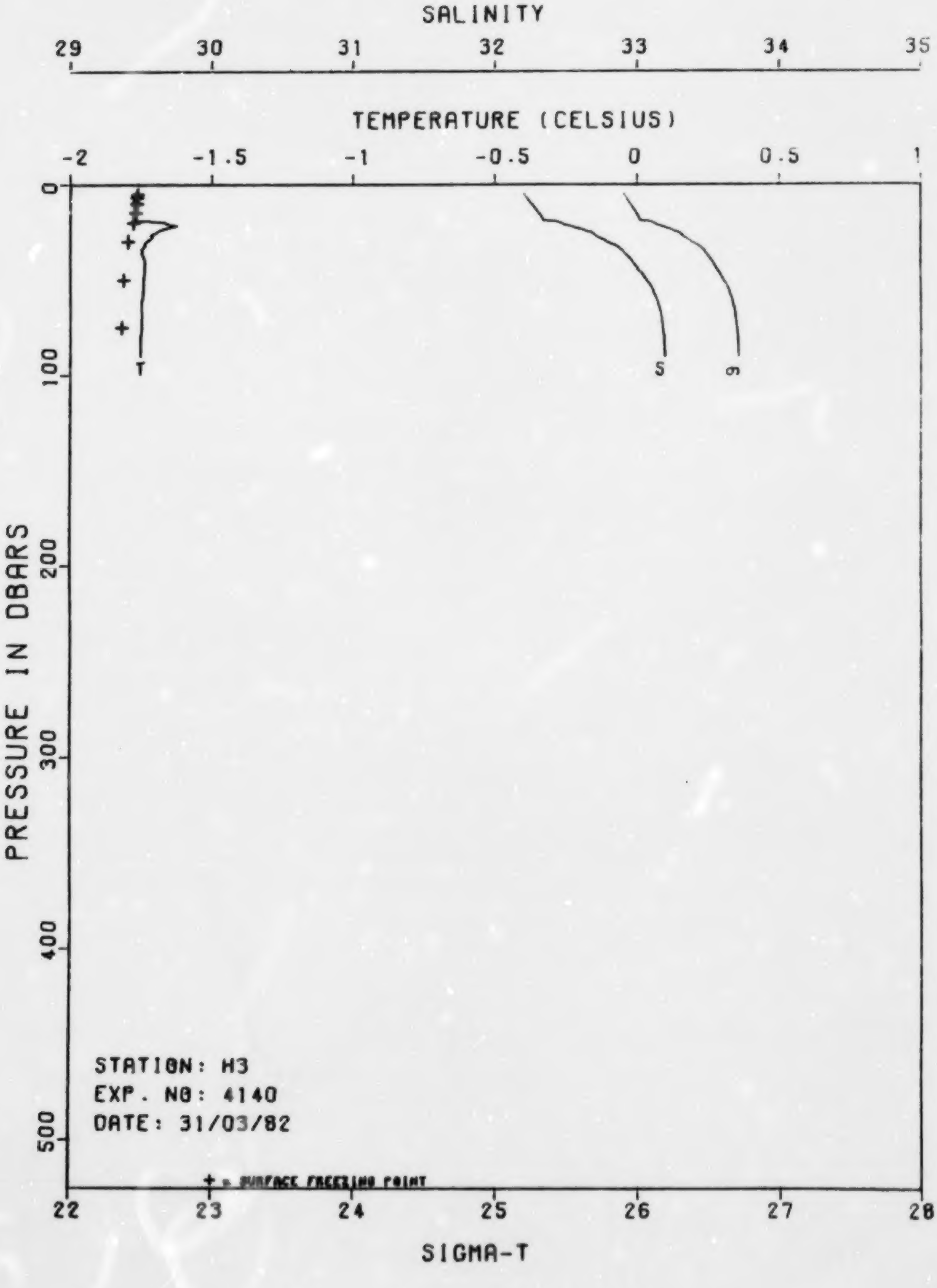
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: H3
EXP. NO: 4140
DATE: 31/03/82
+ = SURFACE FREEZING POINT
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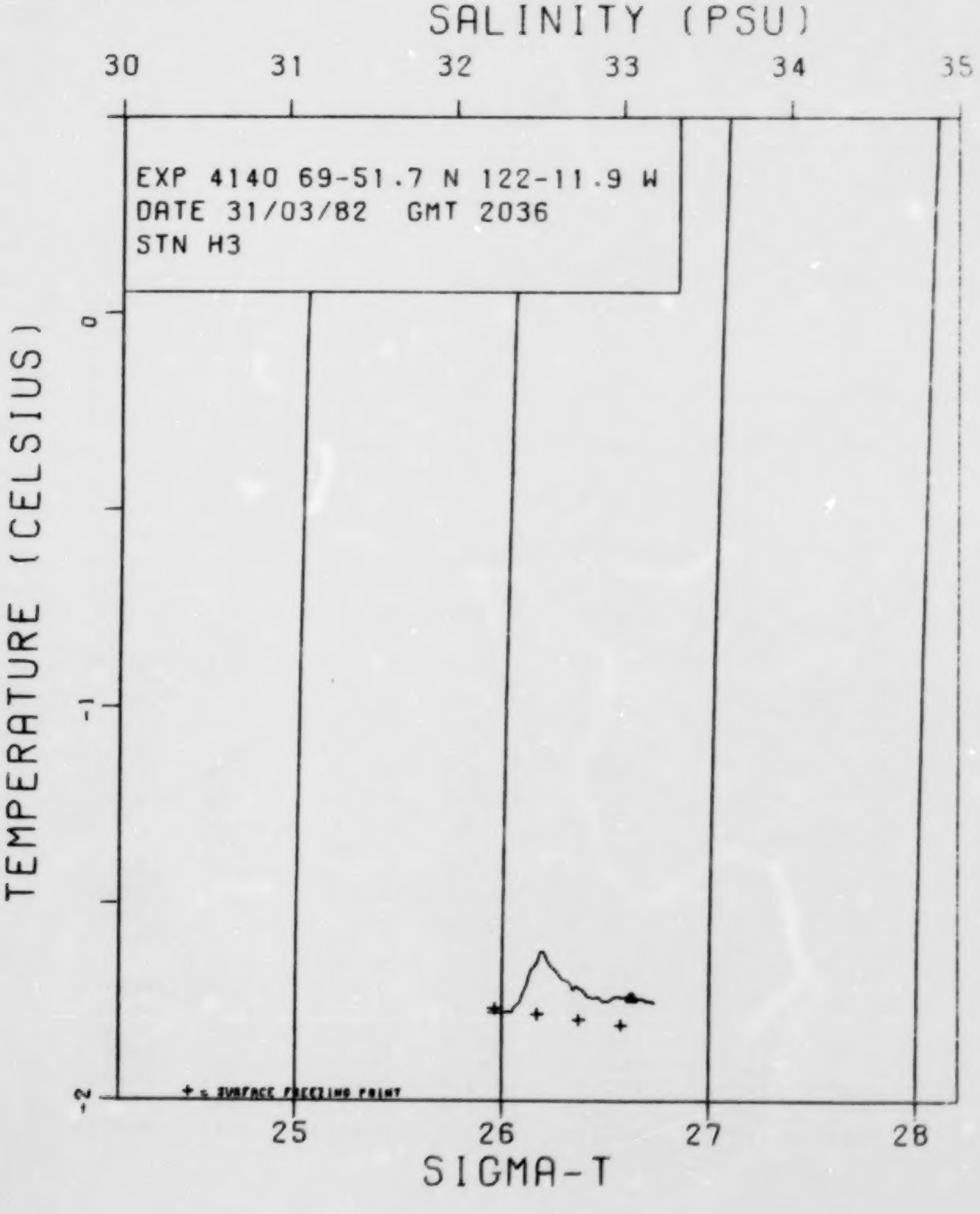
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE H3 EXPERIMENT 4140

LAT.N. 69-51-41 LON.W. 122-11-53 DATE 31/ 3/82 G.M.T. 2036

ICE THICKNESS 1.3 M WATER DEPTH 94 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.9	-1.775	.59469	32.205	25.908	.010	1437.2
5.0	-1.774	.59469	32.204	25.908	.011	1437.2
6.0	-1.775	.59486	32.215	25.916	.013	1437.2
7.0	-1.776	.59507	32.227	25.926	.015	1437.2
8.0	-1.774	.59525	32.236	25.933	.017	1437.3
9.0	-1.775	.59542	32.246	25.942	.019	1437.3
10.0	-1.775	.59559	32.256	25.949	.021	1437.3
11.0	-1.776	.59580	32.268	25.959	.023	1437.4
12.0	-1.775	.59602	32.280	25.969	.025	1437.4
13.0	-1.775	.59622	32.292	25.978	.027	1437.4
14.0	-1.775	.59639	32.301	25.986	.029	1437.5
15.0	-1.774	.59660	32.312	25.995	.031	1437.5
16.0	-1.774	.59680	32.323	26.004	.033	1437.5
17.0	-1.774	.59692	32.330	26.009	.035	1437.6
18.0	-1.774	.59707	32.338	26.016	.037	1437.6
19.0	-1.773	.59726	32.347	26.024	.039	1437.6
20.0	-1.667	.60112	32.460	26.113	.041	1438.3
21.0	-1.655	.60177	32.485	26.133	.043	1438.4
22.0	-1.621	.60325	32.534	26.172	.045	1438.7
23.0	-1.662	.60337	32.586	26.215	.046	1438.6
24.0	-1.684	.60371	32.630	26.251	.048	1438.5
25.0	-1.696	.60420	32.672	26.286	.050	1438.5
27.5	-1.714	.60477	32.724	26.329	.054	1438.6
30.0	-1.730	.60554	32.767	26.380	.058	1438.6
32.5	-1.735	.60668	32.858	26.438	.062	1438.7
35.0	-1.746	.60726	32.902	26.474	.066	1438.8
37.5	-1.745	.60782	32.934	26.500	.070	1438.9
40.0	-1.735	.60855	32.965	26.525	.074	1439.0
42.5	-1.736	.60895	32.988	26.543	.077	1439.1
45.0	-1.738	.60935	33.012	26.563	.081	1439.2
47.5	-1.738	.60988	33.043	26.586	.085	1439.2
50.0	-1.740	.61024	33.064	26.606	.088	1439.3
55.0	-1.741	.61103	33.109	26.642	.095	1439.4
60.0	-1.746	.61150	33.140	26.667	.102	1439.5
65.0	-1.747	.61188	33.161	26.684	.109	1439.6
70.0	-1.746	.61213	33.172	26.693	.116	1439.7
75.0	-1.747	.61231	33.180	26.700	.122	1439.8
80.0	-1.752	.61243	33.190	26.708	.129	1439.9
85.0	-1.752	.61251	33.191	26.709	.135	1440.0
90.0	-1.752	.61263	33.196	26.713	.142	1440.1
90.4	-1.751	.61264	33.196	26.713	.143	1440.1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EXP 4140 69-51.7 N 122-11.9 W
DATE 31/03/82 GMT 2036
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+ = SURFACE FREEZING POINT
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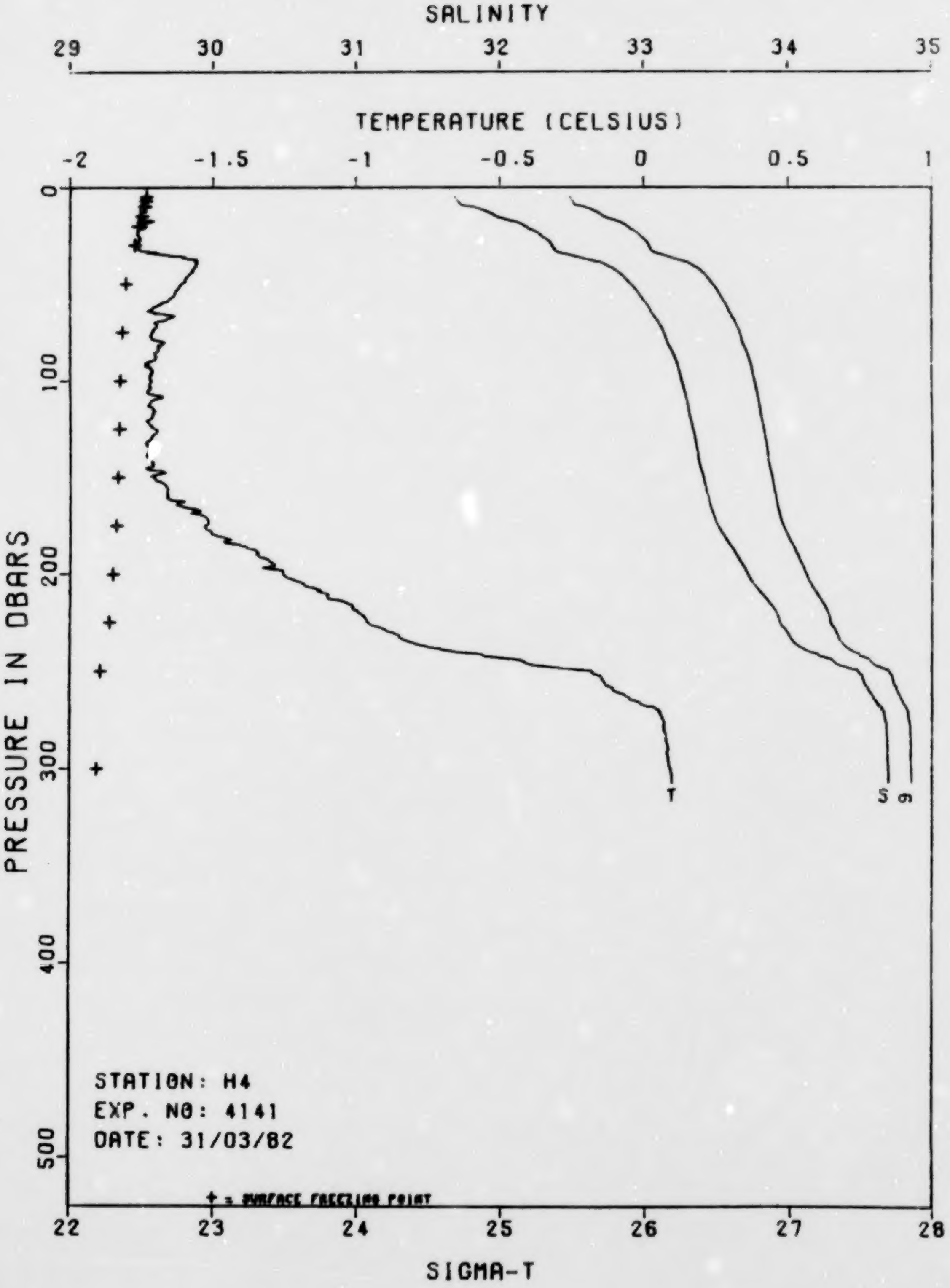
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: H4
EXP. NO: 4141
DATE: 31/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE H4 EXPERIMENT 4141

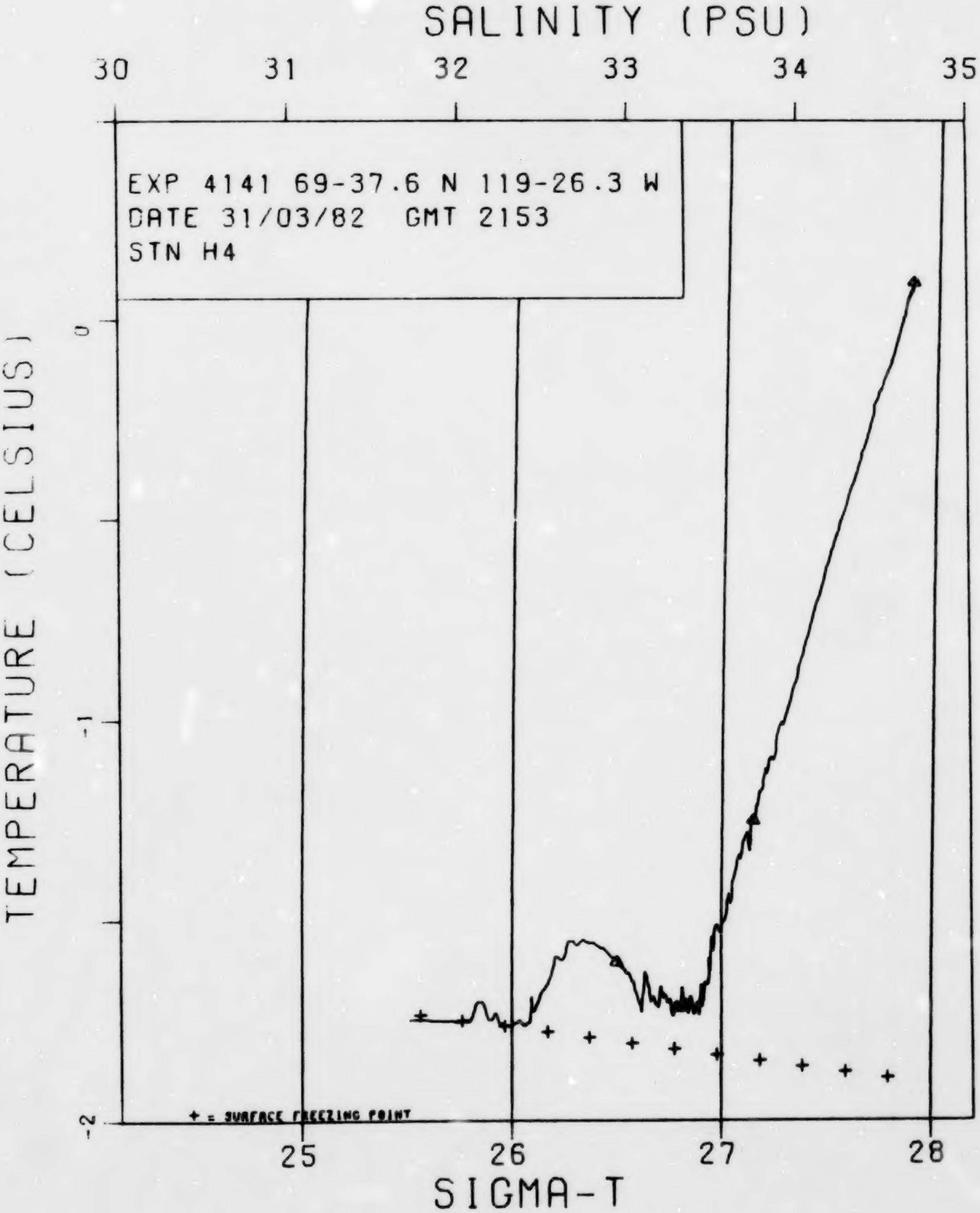
LAT.N. 69-37-35 LON.W. 119-26-17 DATE 31/ 3/82 G.M.T. 2153

ICE THICKNESS 1.5 M WATER DEPTH 310 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.0	-1.749	.58646	31.688	25.487	.012	1436.6
5.0	-1.750	.58646	31.690	25.489	.013	1436.6
6.0	-1.750	.58664	31.699	25.496	.015	1436.6
7.0	-1.749	.58684	31.709	25.505	.017	1436.6
8.0	-1.749	.58704	31.721	25.514	.020	1436.7
9.0	-1.750	.58725	31.733	25.524	.022	1436.7
10.0	-1.752	.58850	31.809	25.585	.025	1436.8
11.0	-1.753	.58924	31.853	25.622	.027	1436.9
12.0	-1.753	.58987	31.891	25.652	.030	1437.0
13.0	-1.752	.59052	31.928	25.682	.032	1437.0
14.0	-1.754	.59094	31.954	25.703	.034	1437.1
15.0	-1.756	.59126	31.976	25.722	.036	1437.1
16.0	-1.750	.59209	32.016	25.754	.039	1437.2
17.0	-1.730	.59325	32.063	25.792	.041	1437.4
18.0	-1.707	.59463	32.119	25.837	.043	1437.6
19.0	-1.751	.59440	32.153	25.865	.045	1437.5
20.0	-1.747	.59489	32.177	25.884	.047	1437.5
21.0	-1.735	.59542	32.196	25.900	.049	1437.6
22.0	-1.762	.59532	32.218	25.918	.051	1437.5
23.0	-1.763	.59589	32.253	25.947	.053	1437.6
24.0	-1.766	.59621	32.274	25.964	.056	1437.6
25.0	-1.764	.59655	32.291	25.978	.058	1437.7
27.5	-1.751	.59760	32.339	26.016	.063	1437.9
30.0	-1.766	.59783	32.367	26.039	.067	1437.9
32.5	-1.756	.59833	32.386	26.055	.072	1438.0
35.0	-1.666	.60172	32.488	26.136	.077	1438.6
37.5	-1.553	.60616	32.624	26.243	.082	1439.4
40.0	-1.555	.60808	32.738	26.336	.086	1439.5
42.5	-1.569	.60894	32.802	26.389	.090	1439.6
45.0	-1.582	.60953	32.850	26.428	.094	1439.7
47.5	-1.596	.60987	32.884	26.456	.098	1439.7
50.0	-1.609	.61015	32.913	26.480	.102	1439.7
55.0	-1.633	.61068	32.969	26.526	.109	1439.8
60.0	-1.684	.61063	33.019	26.568	.117	1439.7
65.0	-1.702	.61096	33.056	26.598	.124	1439.7
70.0	-1.706	.61180	33.107	26.640	.131	1439.8
75.0	-1.714	.61230	33.142	26.668	.138	1439.9
80.0	-1.671	.61350	33.163	26.685	.145	1440.3
85.0	-1.692	.61378	33.200	26.715	.151	1440.3
90.0	-1.717	.61380	33.227	26.737	.158	1440.3
95.0	-1.710	.61433	33.247	26.753	.164	1440.4
100.0	-1.716	.61455	33.264	26.768	.171	1440.5
105.0	-1.725	.61474	33.282	26.782	.177	1440.6
110.0	-1.712	.61535	33.300	26.797	.183	1440.7

SITE H4 EXPERIMENT 4141

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.707	.61567	33.311	26.805	.189	1440.9
120.0	-1.723	.61566	33.326	26.818	.195	1440.9
125.0	-1.699	.61640	33.340	26.826	.201	1441.1
130.0	-1.716	.61639	33.355	26.841	.207	1441.1
135.0	-1.722	.61651	33.365	26.850	.213	1441.2
140.0	-1.723	.61676	33.378	26.860	.219	1441.3
145.0	-1.731	.61689	33.391	26.871	.225	1441.4
150.0	-1.708	.61772	33.412	26.888	.231	1441.6
155.0	-1.661	.61892	33.428	26.899	.236	1441.9
160.0	-1.656	.61932	33.445	26.913	.242	1442.0
165.0	-1.611	.62052	33.460	26.924	.247	1442.4
170.0	-1.531	.62250	33.464	26.942	.253	1442.8
175.0	-1.525	.62312	33.511	26.963	.258	1443.0
180.0	-1.490	.62456	33.555	26.996	.264	1443.3
185.0	-1.404	.62696	33.597	27.029	.269	1443.8
190.0	-1.351	.62878	33.641	27.064	.274	1444.2
195.0	-1.284	.63078	33.681	27.094	.279	1444.7
200.0	-1.256	.63205	33.720	27.125	.283	1445.0
210.0	-1.102	.63672	33.815	27.197	.292	1446.0
220.0	-.986	.64081	33.917	27.275	.300	1446.8
230.0	-.876	.64433	33.992	27.332	.308	1447.6
240.0	-.654	.65135	34.144	27.446	.315	1449.0
250.0	-.177	.66677	34.486	27.700	.320	1451.9
260.0	-.103	.66963	34.559	27.755	.323	1452.5
270.0	.050	.67448	34.657	27.826	.326	1453.5
280.0	.072	.67547	34.682	27.846	.329	1453.8
290.0	.086	.67611	34.694	27.854	.331	1454.0
300.0	.097	.67647	34.698	27.857	.333	1454.2
307.6	.098	.67658	34.699	27.858	.335	1454.4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EXP 4141 69-37.6 N 119-26.3 W
DATE 31/03/82 GMT 2153
STN H4
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+ = SURFACE FREEZING POINT
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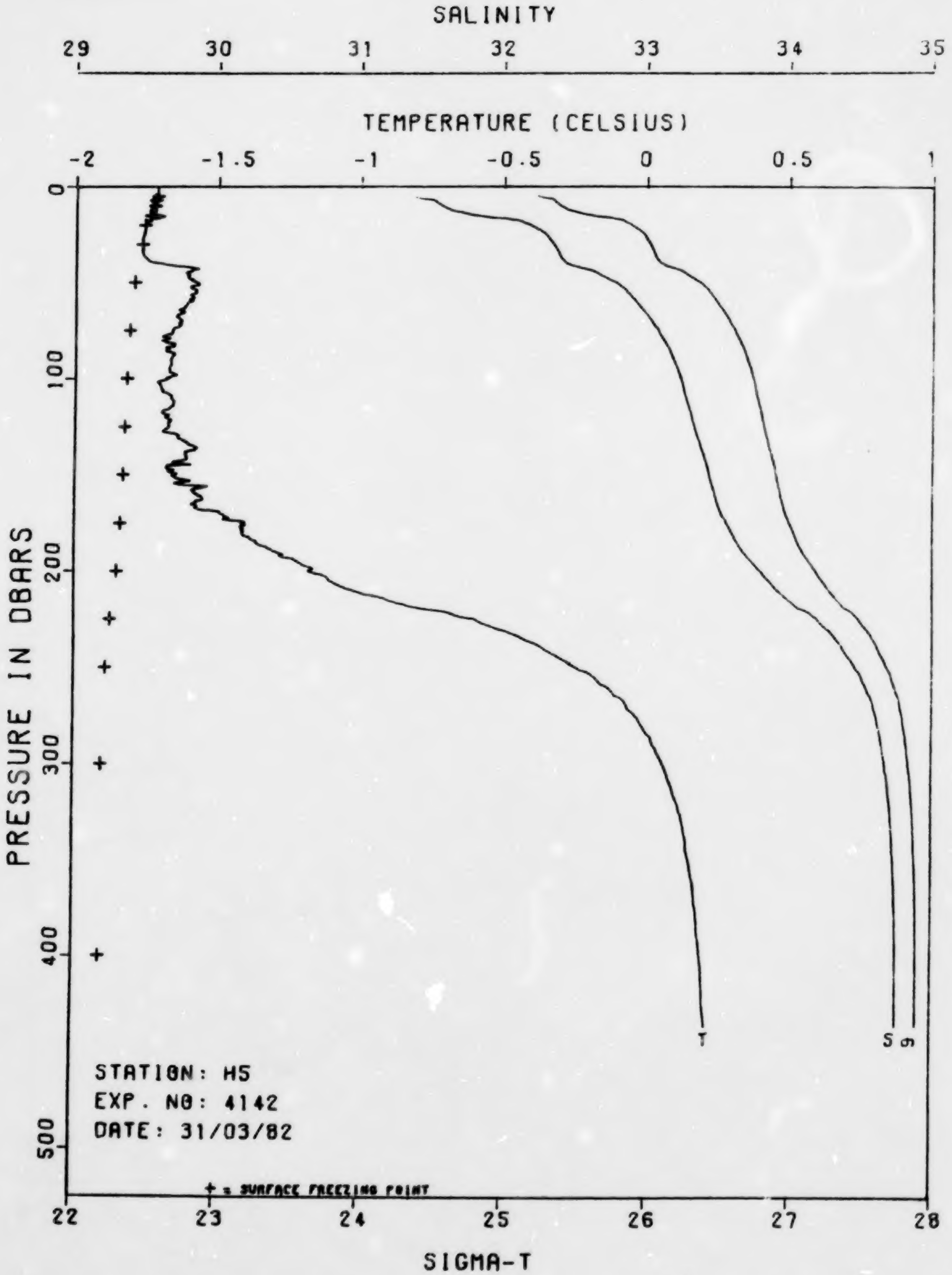
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: H5
EXP. NO: 4142
DATE: 31/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE H5 EXPERIMENT 4142

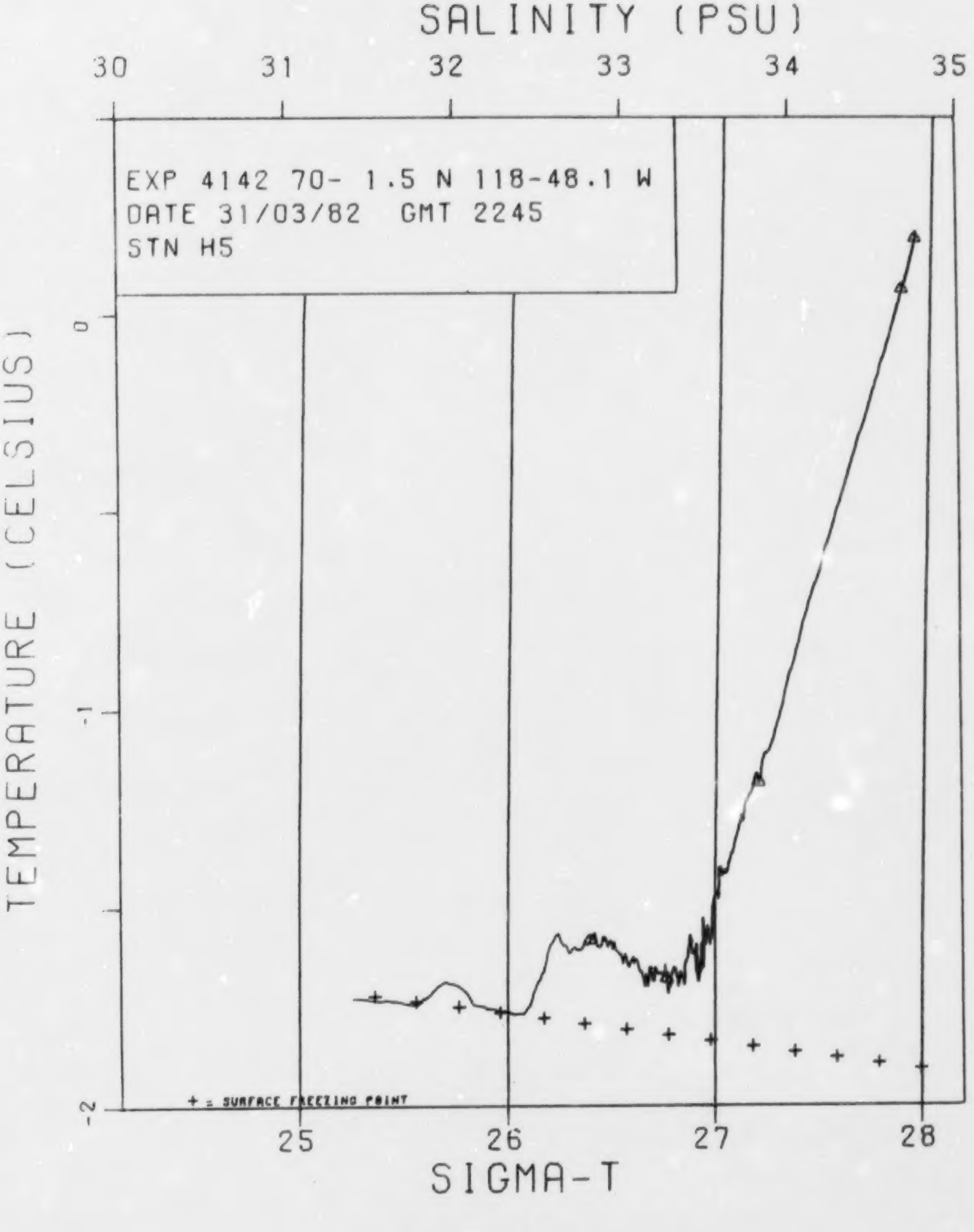
LAT.N. 70- 1-30 LON.W. 118-48- 5 DATE 31/ 3/82 G.M.T. 2245

ICE THICKNESS 1.7 M WATER DEPTH 438 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.9	-1.728	.58152	31.373	25.231	.014	1436.2
5.0	-1.729	.58141	31.367	25.226	.014	1436.2
6.0	-1.731	.58253	31.436	25.282	.017	1436.3
7.0	-1.736	.58379	31.514	25.346	.019	1436.4
8.0	-1.737	.58402	31.529	25.358	.022	1436.5
9.0	-1.734	.58451	31.554	25.378	.025	1436.5
10.0	-1.733	.58487	31.574	25.394	.027	1436.6
11.0	-1.738	.58532	31.606	25.420	.030	1436.6
12.0	-1.738	.58572	31.628	25.438	.032	1436.7
13.0	-1.745	.58689	31.705	25.501	.035	1436.8
14.0	-1.745	.58782	31.759	25.545	.037	1436.8
15.0	-1.714	.58977	31.841	25.611	.040	1437.1
16.0	-1.695	.59233	31.972	25.717	.042	1437.4
17.0	-1.746	.59332	32.065	25.810	.044	1437.3
18.0	-1.750	.59390	32.123	25.841	.046	1437.4
19.0	-1.753	.59441	32.156	25.868	.048	1437.4
20.0	-1.755	.59493	32.188	25.894	.051	1437.5
21.0	-1.759	.59525	32.211	25.913	.053	1437.5
22.0	-1.762	.59559	32.234	25.931	.055	1437.6
23.0	-1.762	.59605	32.261	25.953	.057	1437.6
24.0	-1.765	.59639	32.283	25.971	.059	1437.7
25.0	-1.764	.59661	32.295	25.981	.061	1437.7
27.5	-1.770	.59694	32.320	26.002	.066	1437.7
30.0	-1.768	.59746	32.347	26.023	.071	1437.8
32.5	-1.768	.59782	32.366	26.039	.076	1437.9
35.0	-1.769	.59810	32.383	26.052	.081	1438.0
37.5	-1.757	.59865	32.401	26.067	.085	1438.1
40.0	-1.711	.60025	32.444	26.101	.090	1438.4
42.5	-1.585	.60458	32.562	26.194	.095	1439.2
45.0	-1.619	.60561	32.658	26.273	.099	1439.2
47.5	-1.609	.60681	32.717	26.320	.104	1439.4
50.0	-1.576	.60873	32.793	26.381	.108	1439.7
55.0	-1.575	.60997	32.862	26.437	.116	1439.9
60.0	-1.586	.61087	32.925	26.489	.123	1440.0
65.0	-1.636	.61095	32.962	26.536	.131	1439.9
70.0	-1.628	.61202	33.033	26.578	.138	1440.1
75.0	-1.663	.61222	33.061	26.618	.145	1440.1
80.0	-1.686	.61246	33.120	26.650	.152	1440.1
85.0	-1.669	.61350	33.158	26.680	.159	1440.3
90.0	-1.666	.61403	33.185	26.702	.166	1440.5
95.0	-1.676	.61443	33.215	26.727	.172	1440.5
100.0	-1.671	.61495	33.237	26.744	.179	1440.7
105.0	-1.702	.61473	33.255	26.760	.185	1440.6
110.0	-1.664	.61583	33.275	26.775	.191	1440.9

SITE H5 EXPERIMENT 4142

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.673	.61604	33.295	26.791	.198	1441.0
120.0	-1.689	.61610	33.313	26.807	.204	1441.0
125.0	-1.670	.61681	33.331	26.821	.210	1441.2
130.0	-1.640	.61778	33.352	26.837	.216	1441.5
135.0	-1.585	.61923	33.373	26.853	.222	1441.9
140.0	-1.618	.61910	33.399	26.875	.228	1441.8
145.0	-1.641	.61897	33.414	26.887	.233	1441.8
150.0	-1.652	.61916	33.434	26.904	.239	1441.9
155.0	-1.640	.61978	33.455	26.921	.245	1442.0
160.0	-1.580	.62129	33.474	26.935	.250	1442.4
165.0	-1.585	.62157	33.493	26.950	.256	1442.5
170.0	-1.491	.62387	33.520	26.970	.261	1443.1
175.0	-1.403	.62626	33.560	26.999	.266	1443.6
180.0	-1.414	.62668	33.594	27.027	.271	1443.7
185.0	-1.365	.62831	33.632	27.057	.276	1444.1
190.0	-1.291	.63054	33.677	27.091	.281	1444.6
195.0	-1.213	.63309	33.736	27.137	.286	1445.1
200.0	-1.180	.63489	33.802	27.188	.290	1445.4
210.0	-1.020	.64009	33.919	27.278	.299	1446.5
220.0	-.737	.64866	34.093	27.408	.306	1448.2
230.0	-.510	.65607	34.259	27.533	.312	1449.7
240.0	-.358	.66112	34.373	27.617	.317	1450.7
250.0	-.243	.66499	34.458	27.681	.321	1451.5
260.0	-.133	.66860	34.534	27.737	.325	1452.3
270.0	-.065	.67098	34.587	27.776	.328	1452.9
280.0	-.015	.67269	34.622	27.802	.331	1453.3
290.0	.026	.67406	34.648	27.821	.334	1453.7
300.0	.060	.67529	34.673	27.839	.336	1454.0
310.0	.087	.67626	34.692	27.853	.339	1454.3
320.0	.111	.67712	34.707	27.864	.341	1454.6
330.0	.130	.67779	34.718	27.872	.343	1454.9
340.0	.141	.67827	34.726	27.877	.345	1455.1
350.0	.151	.67868	34.732	27.882	.348	1455.4
360.0	.162	.67912	34.740	27.887	.350	1455.6
370.0	.170	.67947	34.744	27.890	.352	1455.8
380.0	.178	.67979	34.747	27.892	.354	1456.0
390.0	.182	.68000	34.749	27.893	.356	1456.2
400.0	.191	.68034	34.752	27.895	.358	1456.4
425.0	.200	.68083	34.754	27.897	.363	1456.8
436.9	.209	.68118	34.756	27.898	.365	1457.1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EXP 4142 70- 1.5 N 118-48.1 W
DATE 31/03/82 GMT 2245
STN H5
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+ = SURFACE FREEZING POINT
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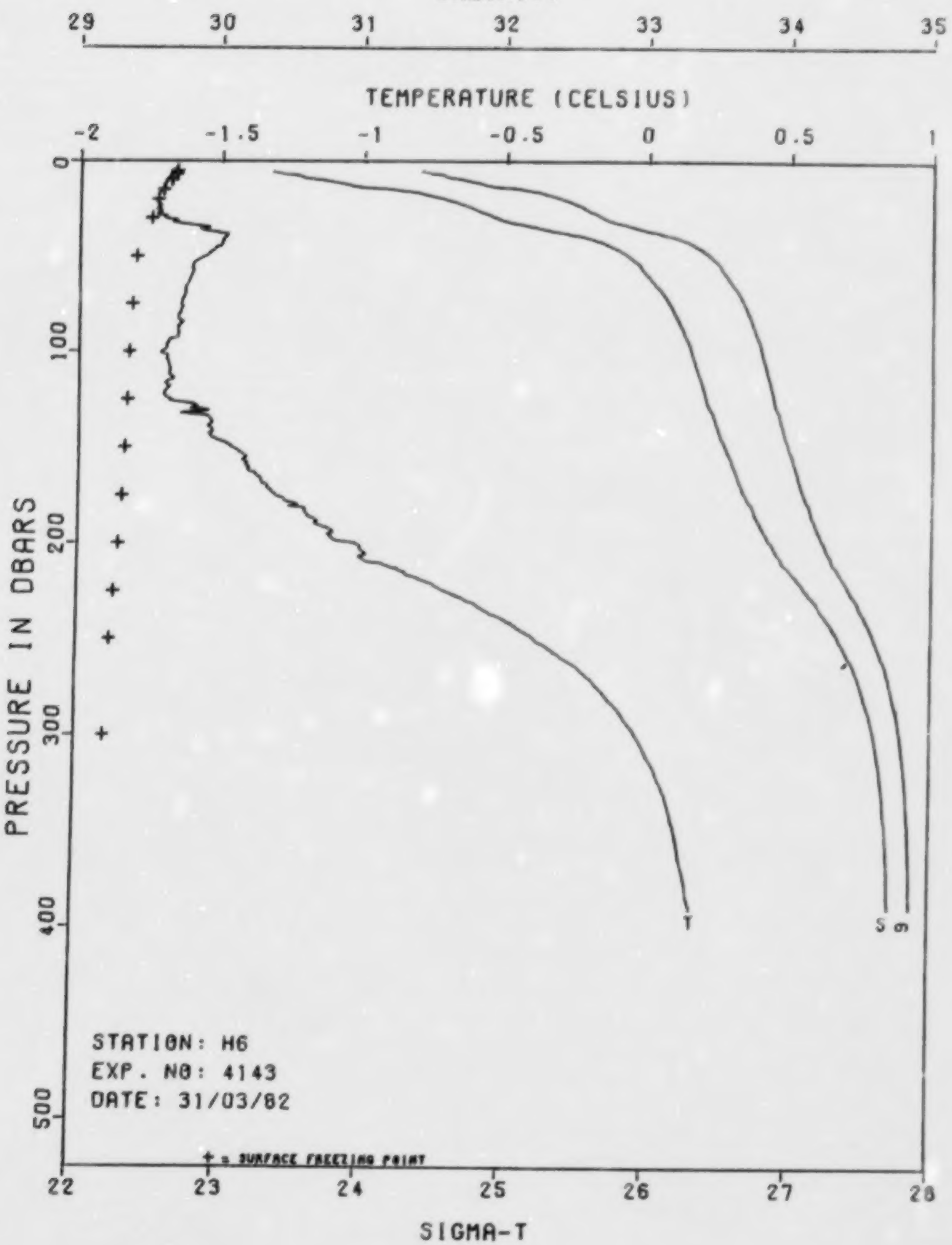
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: H6
EXP. NO: 4143
DATE: 31/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE H6 EXPERIMENT 4143

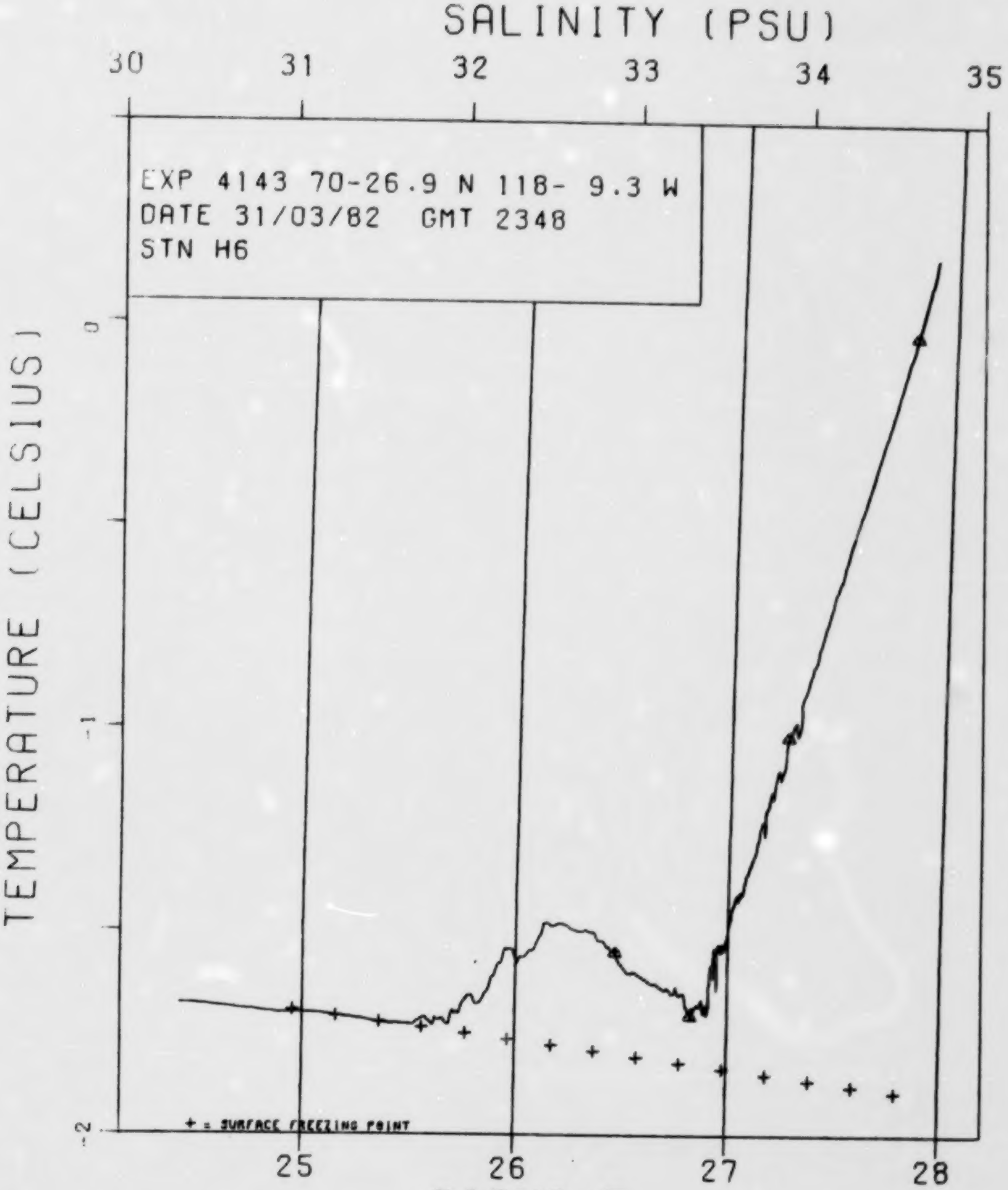
LAT.N. 70-26-54 LON.W. 118- 9-17 DATE 31/ 3/82 G.M.T. 2348

ICE THICKNESS 1.4 M WATER DEPTH 391 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.1	-1.679	.56523	30.360	24.407	.016	1435.1
6.0	-1.680	.56625	30.420	24.456	.022	1435.1
7.0	-1.684	.56796	30.525	24.542	.025	1435.3
8.0	-1.686	.56868	30.568	24.577	.028	1435.4
9.0	-1.689	.56961	30.626	24.624	.032	1435.4
10.0	-1.693	.57134	30.732	24.710	.035	1435.6
11.0	-1.698	.57276	30.820	24.781	.038	1435.7
12.0	-1.701	.57388	30.869	24.837	.041	1435.8
13.0	-1.701	.57492	30.950	24.887	.044	1435.9
14.0	-1.703	.57810	31.139	25.041	.047	1436.2
15.0	-1.704	.58004	31.260	25.138	.050	1436.3
16.0	-1.717	.58191	31.377	25.234	.053	1436.5
17.0	-1.719	.58276	31.430	25.277	.056	1436.6
18.0	-1.725	.58363	31.487	25.323	.058	1436.6
19.0	-1.727	.58462	31.547	25.372	.061	1436.7
20.0	-1.727	.58543	31.594	25.410	.064	1436.8
21.0	-1.729	.58625	31.644	25.451	.066	1436.9
22.0	-1.729	.58684	31.680	25.480	.069	1436.9
23.0	-1.718	.58779	31.723	25.515	.071	1437.1
24.0	-1.711	.58854	31.759	25.545	.073	1437.2
25.0	-1.723	.58877	31.785	25.565	.076	1437.2
27.5	-1.724	.59033	31.877	25.641	.082	1437.3
30.0	-1.697	.59213	31.953	25.702	.088	1437.6
32.5	-1.666	.59506	32.095	25.816	.093	1438.0
35.0	-1.543	.60001	32.250	25.940	.098	1438.8
37.5	-1.507	.60379	32.433	26.087	.103	1439.3
40.0	-1.485	.60690	32.591	26.215	.108	1439.7
42.5	-1.496	.60844	32.692	26.298	.112	1439.8
45.0	-1.516	.60928	32.763	26.355	.117	1439.9
47.5	-1.541	.60993	32.827	26.408	.121	1439.9
50.0	-1.553	.61052	32.874	26.446	.125	1439.9
55.0	-1.603	.61093	32.950	26.510	.132	1439.9
60.0	-1.606	.61182	33.006	26.555	.140	1440.0
65.0	-1.623	.61249	33.058	26.598	.147	1440.1
70.0	-1.627	.61339	33.113	26.643	.154	1440.2
75.0	-1.644	.61381	33.155	26.677	.161	1440.3
80.0	-1.646	.61443	33.191	26.706	.168	1440.4
85.0	-1.632	.61530	33.224	26.733	.174	1440.6
90.0	-1.651	.61551	33.254	26.757	.180	1440.6
95.0	-1.688	.61543	33.288	26.786	.187	1440.6
100.0	-1.711	.61541	33.309	26.804	.193	1440.6
105.0	-1.686	.61631	33.331	26.821	.199	1440.8
110.0	-1.678	.61687	33.353	26.838	.205	1441.0
115.0	-1.680	.61729	33.376	26.858	.211	1441.1

SITE H6   EXPERIMENT 4143

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.693	.61739	33.395	26.873	.217	1441.1
125.0	-1.672	.61810	33.410	26.885	.223	1441.3
130.0	-1.564	.62075	33.443	26.909	.228	1442.0
135.0	-1.535	.62179	33.469	26.929	.234	1442.2
140.0	-1.529	.62235	33.492	26.948	.239	1442.4
145.0	-1.526	.62280	33.514	26.966	.245	1442.5
150.0	-1.458	.62473	33.547	26.990	.250	1443.0
155.0	-1.407	.62632	33.580	27.016	.255	1443.3
160.0	-1.408	.62677	33.605	27.036	.260	1443.4
165.0	-1.368	.62800	33.630	27.055	.265	1443.7
170.0	-1.331	.62924	33.658	27.077	.270	1444.0
175.0	-1.301	.63037	33.688	27.100	.275	1444.3
180.0	-1.240	.63241	33.735	27.137	.279	1444.7
185.0	-1.186	.63383	33.755	27.151	.284	1445.1
190.0	-1.161	.63497	33.791	27.179	.288	1445.3
195.0	-1.122	.63649	33.833	27.212	.293	1445.7
200.0	-1.014	.63938	33.877	27.244	.297	1446.3
210.0	-.927	.64240	33.950	27.299	.305	1447.0
220.0	-.762	.64787	34.076	27.395	.312	1448.1
230.0	-.616	.65275	34.187	27.479	.318	1449.1
240.0	-.488	.65685	34.274	27.544	.324	1450.0
250.0	-.384	.66041	34.355	27.605	.329	1450.7
260.0	-.278	.66387	34.427	27.656	.333	1451.5
270.0	-.188	.66692	34.494	27.708	.337	1452.2
280.0	-.128	.66893	34.536	27.738	.341	1452.7
290.0	-.073	.67090	34.579	27.770	.344	1453.1
300.0	-.025	.67248	34.609	27.792	.347	1453.6
310.0	.010	.67366	34.631	27.808	.350	1453.9
320.0	.042	.67479	34.653	27.824	.352	1454.3
330.0	.074	.67585	34.671	27.836	.355	1454.6
340.0	.094	.67654	34.682	27.844	.358	1454.9
350.0	.111	.67722	34.695	27.854	.360	1455.1
360.0	.124	.67776	34.705	27.862	.362	1455.4
370.0	.140	.67830	34.712	27.866	.365	1455.6
380.0	.153	.67873	34.715	27.868	.367	1455.8
390.0	.169	.67928	34.722	27.872	.369	1456.1
390.3	.169	.67930	34.723	27.873	.369	1456.1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EXP 4143 70-26.9 N 118- 9.3 W
DATE 31/03/82 GMT 2348
STN H6
TEMPERATURE (CELSIUS)
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-2
+ = SURFACE FREEZING POINT
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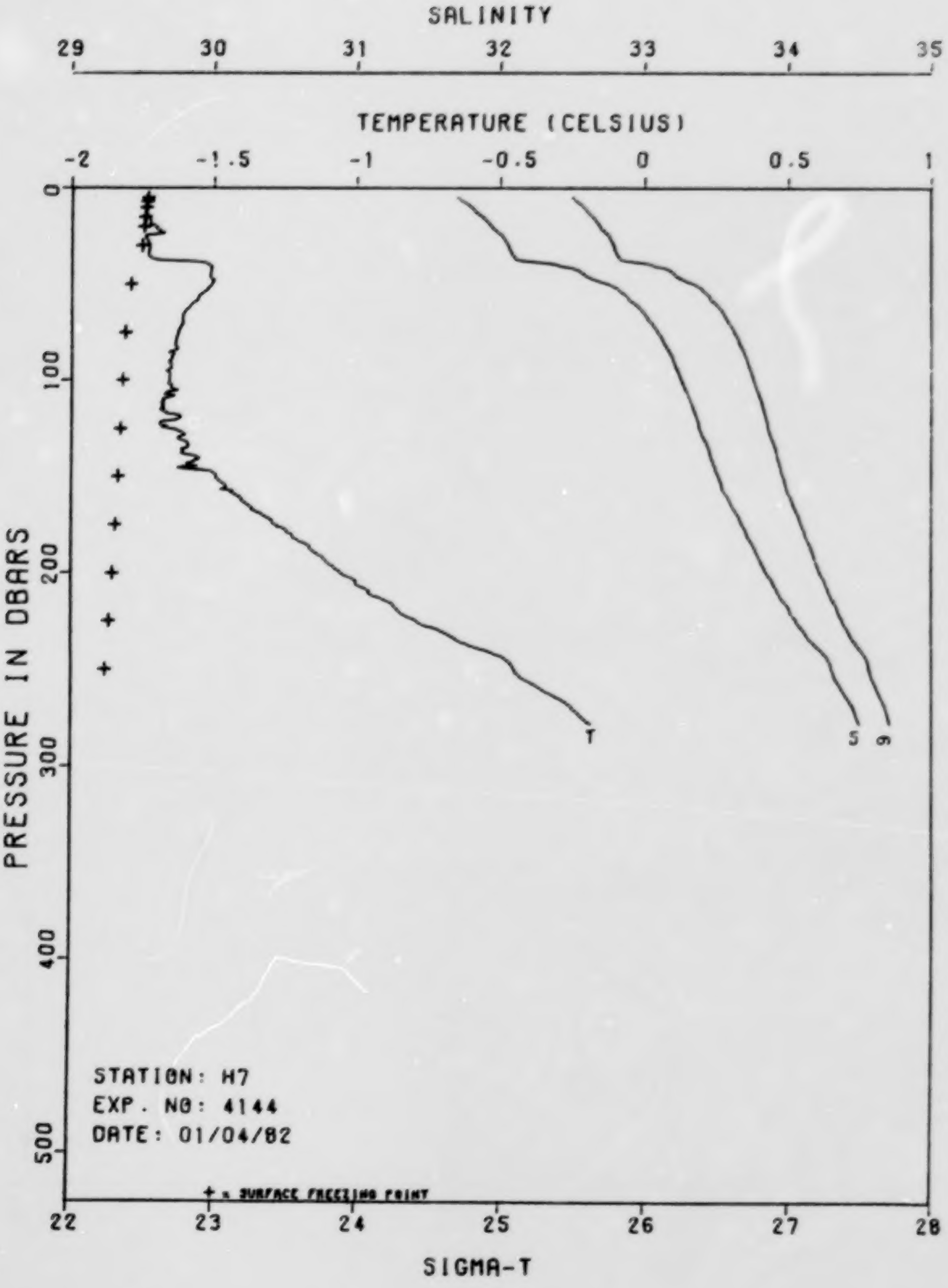
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: H7
EXP. NO: 4144
DATE: 01/04/82
+ = SURFACE FREEZING POINT
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28
SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE H7   EXPERIMENT 4144

LAT.N. 70-47-35   LON.W. 118-36-30   DATE 1/ 4/82   G.M.T. 44

ICE THICKNESS 1.4 M   WATER DEPTH 280 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.7	-1.739	.58681	31.698	25.495	.012	1436.6
5.0	-1.737	.58684	31.698	25.495	.013	1436.7
6.0	-1.742	.58716	31.722	25.515	.015	1436.7
7.0	-1.742	.58742	31.737	25.527	.017	1436.7
8.0	-1.744	.58787	31.764	25.549	.020	1436.8
9.0	-1.743	.58823	31.784	25.565	.022	1436.8
10.0	-1.741	.58843	31.793	25.572	.025	1436.8
11.0	-1.744	.58872	31.813	25.589	.027	1436.9
12.0	-1.744	.58890	31.823	25.597	.030	1436.9
13.0	-1.744	.58918	31.839	25.610	.032	1436.9
14.0	-1.741	.58947	31.853	25.621	.034	1437.0
15.0	-1.733	.59000	31.875	25.639	.037	1437.1
16.0	-1.729	.59028	31.887	25.648	.039	1437.1
17.0	-1.725	.59063	31.902	25.661	.041	1437.2
18.0	-1.726	.59084	31.915	25.671	.044	1437.2
19.0	-1.721	.59115	31.928	25.682	.046	1437.3
20.0	-1.710	.59153	31.938	25.690	.048	1437.4
21.0	-1.701	.59189	31.949	25.698	.050	1437.4
22.0	-1.701	.59217	31.965	25.712	.053	1437.5
23.0	-1.686	.59274	31.982	25.725	.055	1437.6
24.0	-1.682	.59309	31.997	25.737	.057	1437.6
25.0	-1.747	.59224	32.016	25.754	.059	1437.4
27.5	-1.737	.59272	32.033	25.767	.065	1437.5
30.0	-1.728	.59327	32.055	25.785	.071	1437.6
32.5	-1.729	.59351	32.069	25.796	.076	1437.7
35.0	-1.732	.59375	32.084	25.809	.081	1437.7
37.5	-1.701	.59495	32.120	25.837	.087	1437.9
40.0	-1.522	.60275	32.387	26.050	.092	1439.2
42.5	-1.505	.60553	32.530	26.166	.097	1439.5
45.0	-1.513	.60628	32.582	26.209	.101	1439.6
47.5	-1.507	.60745	32.644	26.258	.106	1439.8
50.0	-1.510	.60931	32.754	26.348	.110	1440.0
55.0	-1.545	.61044	32.857	26.432	.118	1440.0
60.0	-1.577	.61114	32.931	26.494	.126	1440.0
65.0	-1.606	.61174	32.998	26.549	.133	1440.1
70.0	-1.613	.61253	33.046	26.588	.141	1440.2
75.0	-1.626	.61308	33.091	26.625	.148	1440.3
80.0	-1.636	.61364	33.132	26.658	.154	1440.4
85.0	-1.646	.61419	33.173	26.692	.161	1440.5
90.0	-1.652	.61463	33.203	26.716	.168	1440.6
95.0	-1.662	.61496	33.231	26.739	.174	1440.6
100.0	-1.657	.61555	33.257	26.760	.181	1440.8
105.0	-1.639	.61642	33.285	26.783	.187	1441.0
110.0	-1.677	.61630	33.318	26.810	.193	1440.9

```
                                          SITE H7    EXPERIMENT 4144

PRESSURE     TEMP      COND. R   SALINITY   SIGMAT       DHA     SOUND
 (DBARS)   (DEG.C)                        (KG/M**3)   (DYN.M)    (M/S)

   115.0    -1.677    .61672     33.339    26.627       .199    1441.1
   120.0    -1.622    .61825     33.366    26.648       .205    1441.4
   125.0    -1.660    .61785     33.381    26.661       .211    1441.4
   130.0    -1.631    .61896     33.412    26.685       .217    1441.6
   135.0    -1.592    .62029     33.444    26.910       .223    1441.9
   140.0    -1.561    .62123     33.462    26.924       .228    1442.2
   145.0    -1.593    .62119     33.492    26.950       .234    1442.2
   150.0    -1.493    .62354     33.515    26.965       .239    1442.7
   155.0    -1.459    .62464     33.540    26.985       .244    1443.0
   160.0    -1.420    .62596     33.572    27.009       .250    1443.3
   165.0    -1.377    .62746     33.608    27.037       .255    1443.7
   170.0    -1.327    .62919     33.650    27.070       .260    1444.0
   175.0    -1.286    .63052     33.680    27.093       .264    1444.4
   180.0    -1.226    .63229     33.713    27.118       .269    1444.8
   185.0    -1.175    .63401     33.753    27.149       .274    1445.1
   190.0    -1.138    .63535     33.767    27.175       .278    1445.5
   195.0    -1.098    .63663     33.814    27.195       .282    1445.8
   200.0    -1.056    .63810     33.850    27.224       .287    1446.1
   210.0     -.958    .64143     33.928    27.283       .294    1446.8
   220.0     -.851    .64509     34.015    27.349       .302    1447.6
   230.0     -.703    .64970     34.109    27.420       .309    1448.6
   240.0     -.550    .65485     34.228    27.509       .315    1449.6
   250.0     -.449    .65822     34.302    27.565       .320    1450.4
   260.0     -.353    .66146     34.374    27.619       .325    1451.1
   270.0     -.247    .66508     34.456    27.679       .329    1451.8
   278.0     -.183    .66714     34.497    27.709       .332    1452.3
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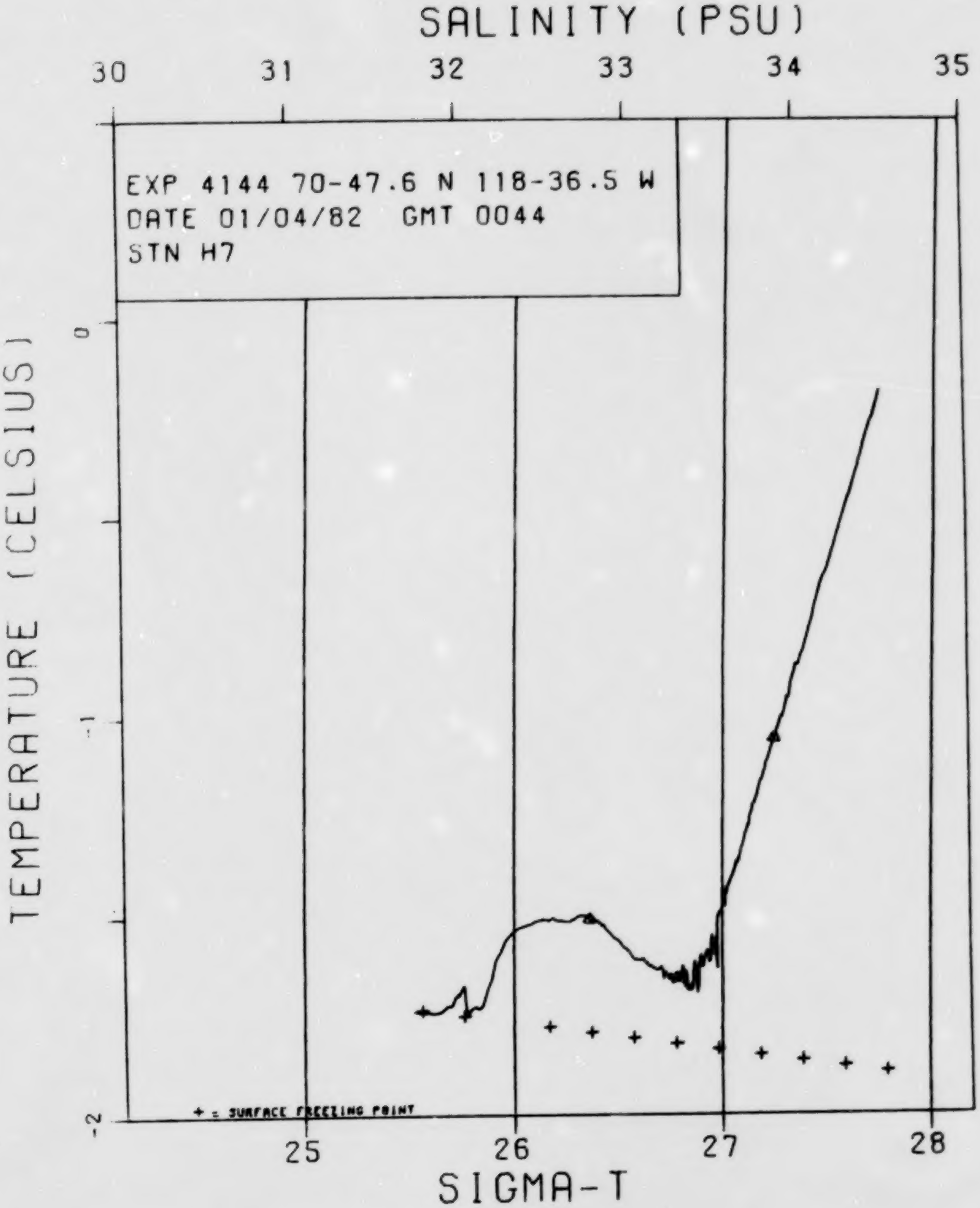
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EXP 4144 70-47.6 N 118-36.5 W
DATE 01/04/82 GMT 0044
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+ = SURFACE FREEZING POINT
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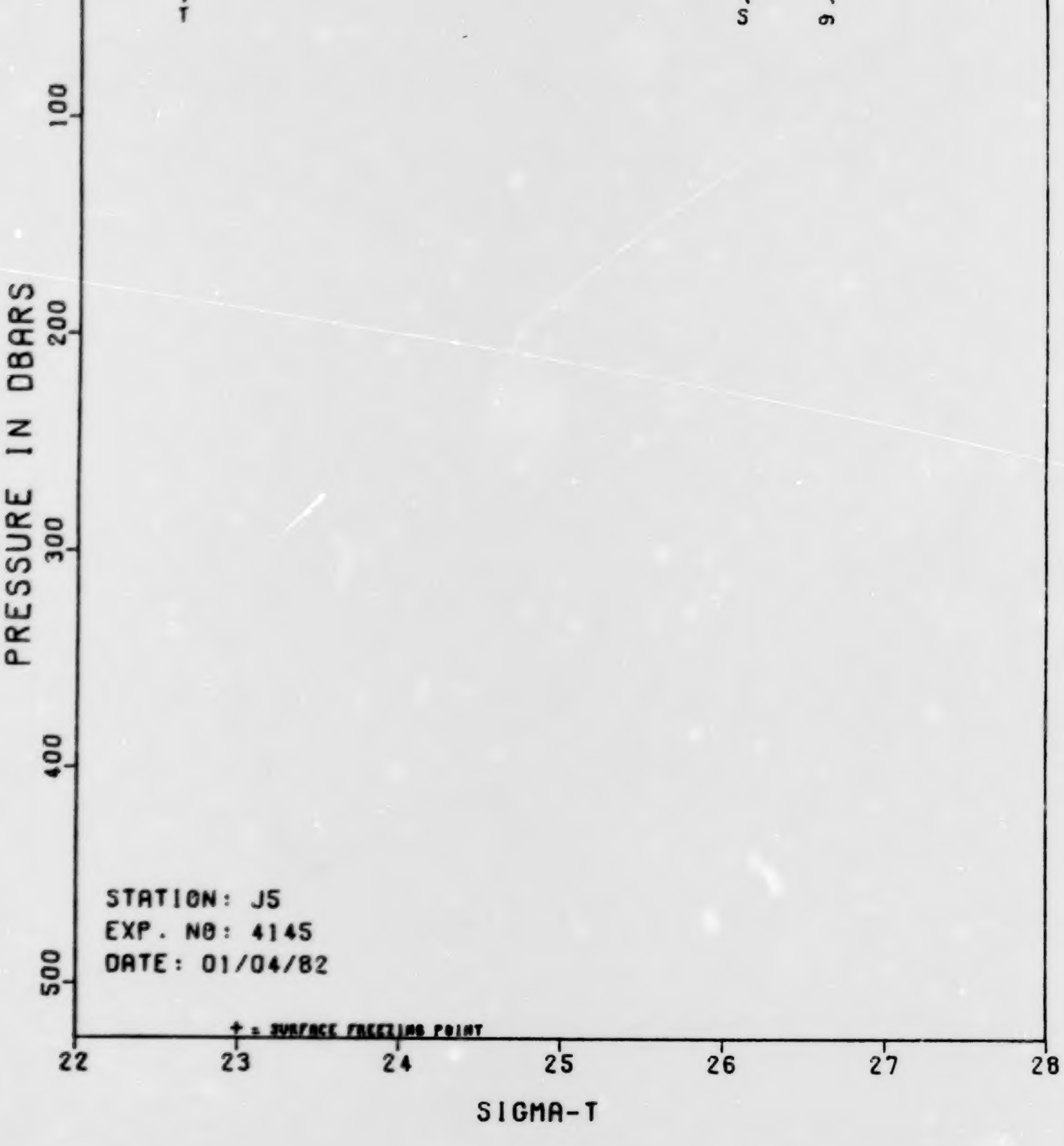
26
27
28
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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100
200
300
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STATION: J5
EXP. NO: 4145
DATE: 01/04/82
+ = SURFACE FREEZING POINT
22
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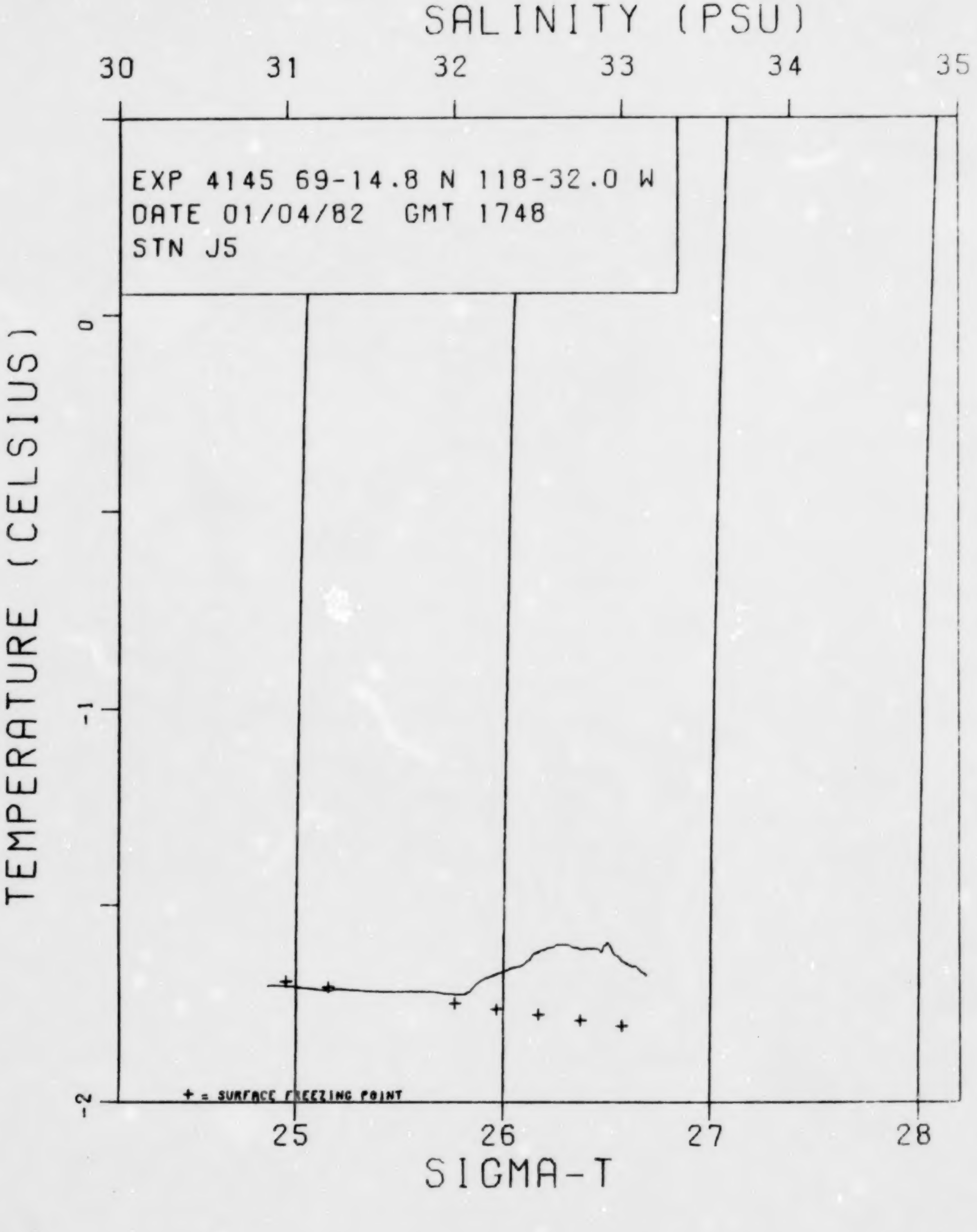
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE 05 EXPERIMENT 4145

LAT.N. 69-14-47 LON.W. 118-32- 0 DATE 1/ 4/82 G.M.T. 1748

ICE THICKNESS 1.4 M WATER DEPTH 52 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.1	-1.705	.57371	30.887	24.836	.016	1435.7
6.0	-1.705	.57384	30.894	24.841	.019	1435.7
7.0	-1.705	.57409	30.908	24.853	.022	1435.7
8.0	-1.705	.57433	30.921	24.863	.025	1435.8
9.0	-1.705	.57456	30.934	24.874	.028	1435.8
10.0	-1.707	.57505	30.965	24.899	.031	1435.8
11.0	-1.708	.57579	31.009	24.935	.034	1435.9
12.0	-1.711	.57695	31.081	24.993	.037	1436.0
13.0	-1.712	.57763	31.122	25.027	.040	1436.1
14.0	-1.714	.57813	31.152	25.051	.043	1436.1
15.0	-1.716	.57847	31.174	25.069	.046	1436.2
16.0	-1.719	.57960	31.243	25.125	.049	1436.3
17.0	-1.715	.58068	31.302	25.173	.051	1436.4
18.0	-1.722	.58548	31.593	25.410	.054	1436.8
19.0	-1.726	.59123	31.940	25.691	.057	1437.3
20.0	-1.688	.59594	32.175	25.882	.059	1437.8
21.0	-1.657	.59995	32.379	26.047	.061	1438.3
22.0	-1.617	.60289	32.509	26.152	.063	1438.6
23.0	-1.601	.60548	32.644	26.261	.064	1438.9
24.0	-1.613	.60756	32.760	26.372	.066	1439.1
25.0	-1.612	.60829	32.821	26.405	.068	1439.2
27.5	-1.601	.60981	32.899	26.468	.072	1439.4
30.0	-1.650	.61097	33.020	26.567	.075	1439.3
32.5	-1.661	.61154	33.065	26.605	.079	1439.4
35.0	-1.661	.61199	33.090	26.625	.083	1439.5
37.5	-1.668	.61215	33.106	26.636	.086	1439.5
40.0	-1.671	.61222	33.112	26.643	.090	1439.5
42.5	-1.673	.61236	33.122	26.651	.093	1439.6
45.0	-1.676	.61251	33.132	26.659	.096	1439.6
47.4	-1.682	.61266	33.145	26.670	.100	1439.6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DATE 01/04/82 GMT 1748
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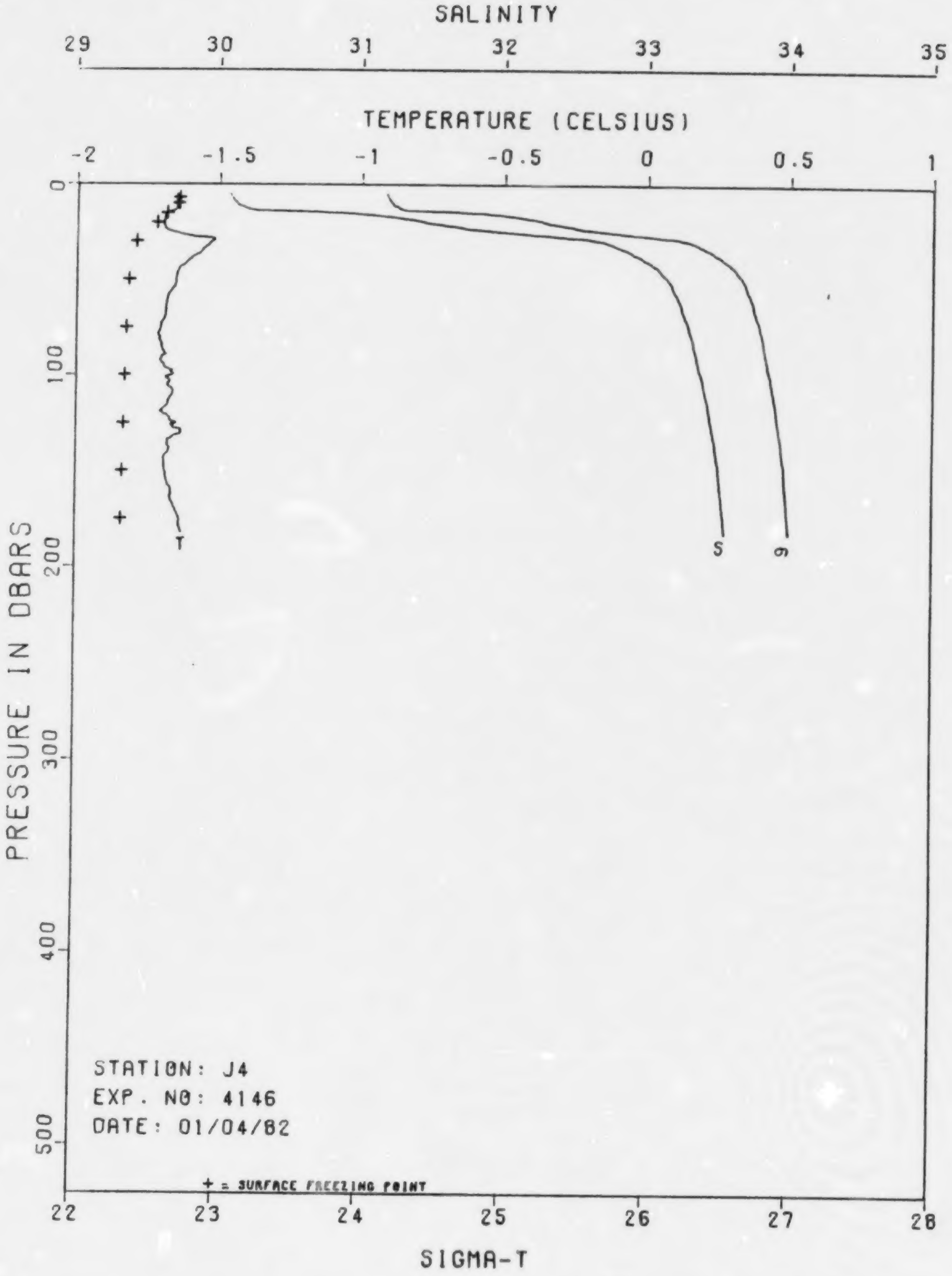
SIGMA-T


SALINITY
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33
34
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TEMPERATURE (CELSIUS)
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-1
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PRESSURE IN DBARS
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STATION: J4
EXP. NO: 4146
DATE: 01/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE J4   EXPERIMENT 4146

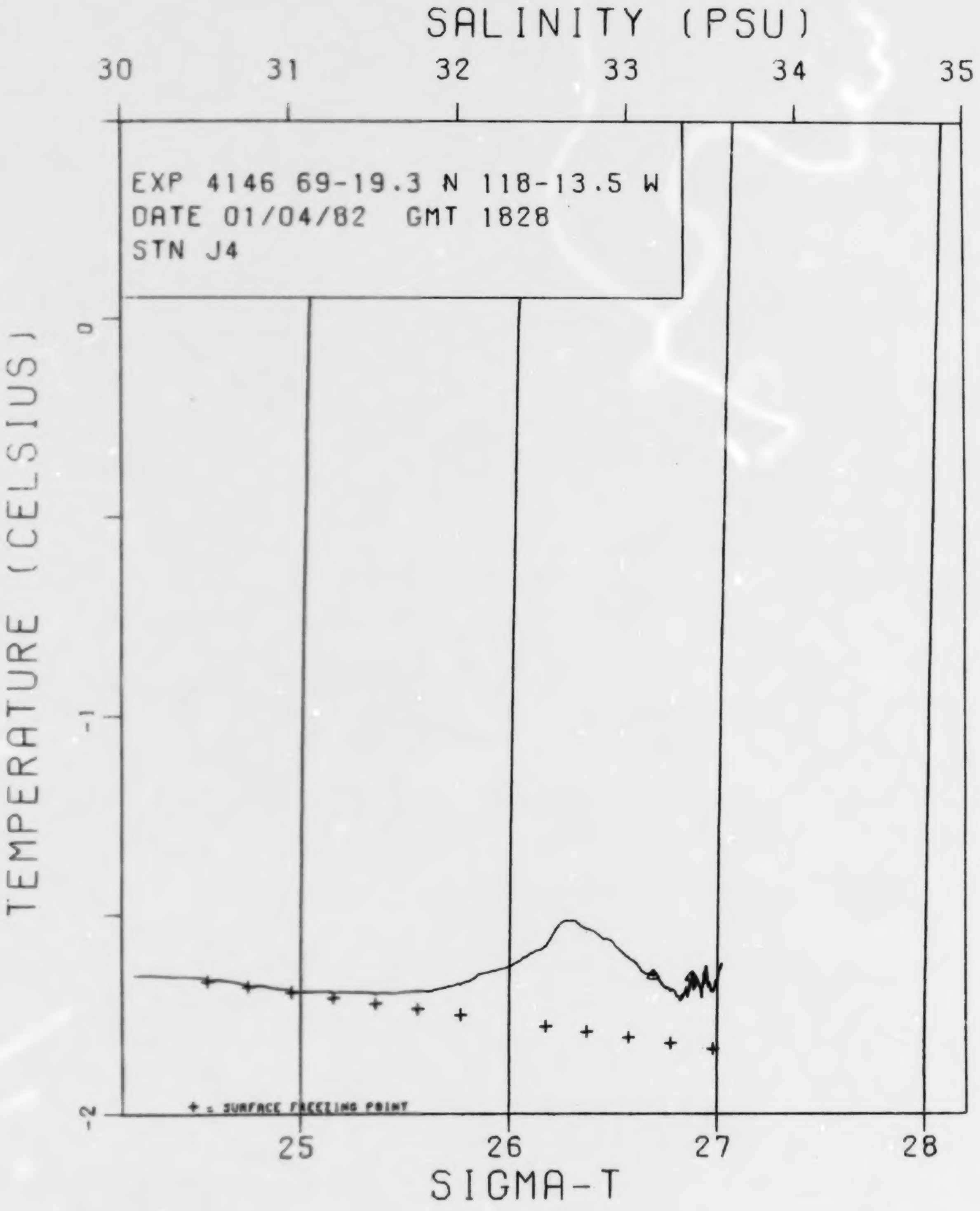
LAT.N. 69-19-17   LON.W. 118-13-30   DATE 1/ 4/82   G.M.T. 1828

ICE THICKNESS 1.4 M   WATER DEPTH 184 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.652	.56080	30.072	24.173	.020	1434.8
6.0	-1.653	.56089	30.078	24.178	.022	1434.8
7.0	-1.652	.56107	30.087	24.185	.026	1434.8
8.0	-1.652	.56127	30.098	24.194	.030	1434.9
9.0	-1.652	.56142	30.106	24.201	.034	1434.9
10.0	-1.652	.56168	30.120	24.212	.037	1434.9
11.0	-1.652	.56190	30.133	24.223	.041	1435.0
12.0	-1.652	.56257	30.172	24.254	.045	1435.0
13.0	-1.652	.56301	30.197	24.274	.048	1435.1
14.0	-1.658	.56724	30.451	24.481	.052	1435.4
15.0	-1.678	.57341	30.835	24.793	.055	1435.9
16.0	-1.693	.57707	31.066	24.981	.058	1436.2
17.0	-1.692	.57949	31.208	25.096	.061	1436.4
18.0	-1.694	.58107	31.303	25.174	.064	1436.5
19.0	-1.695	.58273	31.401	25.253	.067	1436.7
20.0	-1.696	.58377	31.464	25.304	.069	1436.8
21.0	-1.697	.58530	31.554	25.378	.072	1436.9
22.0	-1.694	.58720	31.663	25.466	.075	1437.1
23.0	-1.692	.58846	31.735	25.524	.077	1437.2
24.0	-1.685	.59095	31.874	25.637	.079	1437.5
25.0	-1.667	.59420	32.046	25.777	.082	1437.8
27.5	-1.591	.60233	32.444	26.098	.087	1438.8
30.0	-1.523	.60804	32.707	26.310	.091	1439.5
32.5	-1.541	.60911	32.788	26.376	.095	1439.6
35.0	-1.560	.61026	32.875	26.448	.099	1439.6
37.5	-1.588	.61095	32.946	26.506	.103	1439.6
40.0	-1.608	.61147	32.996	26.547	.107	1439.7
42.5	-1.625	.61204	33.048	26.589	.111	1439.7
45.0	-1.645	.61235	33.087	26.622	.114	1439.7
47.5	-1.647	.61281	33.116	26.645	.118	1439.8
50.0	-1.653	.61325	33.147	26.670	.121	1439.8
55.0	-1.667	.61363	33.181	26.699	.128	1439.9
60.0	-1.682	.61396	33.215	26.727	.134	1440.0
65.0	-1.686	.61435	33.240	26.747	.141	1440.0
70.0	-1.690	.61474	33.264	26.767	.147	1440.1
75.0	-1.705	.61496	33.290	26.789	.153	1440.2
80.0	-1.711	.61521	33.310	26.804	.160	1440.3
85.0	-1.700	.61569	33.323	26.815	.166	1440.4
90.0	-1.692	.61624	33.343	26.831	.172	1440.6
95.0	-1.690	.61652	33.355	26.841	.178	1440.7
100.0	-1.657	.61754	33.374	26.856	.184	1441.0
105.0	-1.680	.61741	33.390	26.869	.190	1440.9
110.0	-1.663	.61805	33.407	26.882	.195	1441.1
115.0	-1.676	.61809	33.423	26.895	.201	1441.2

SITE J4 EXPERIMENT 4146

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.695	.61802	33.434	26.905	.207	1441.2
125.0	-1.648	.61914	33.444	26.912	.212	1441.5
130.0	-1.631	.61976	33.459	26.924	.218	1441.7
135.0	-1.681	.61912	33.474	26.937	.223	1441.6
140.0	-1.675	.61936	33.480	26.942	.229	1441.7
145.0	-1.687	.61941	33.492	26.952	.234	1441.7
150.0	-1.686	.61964	33.502	26.960	.240	1441.8
155.0	-1.680	.61993	33.509	26.965	.245	1441.9
160.0	-1.664	.62042	33.517	26.972	.250	1442.1
165.0	-1.666	.62057	33.525	26.976	.256	1442.2
170.0	-1.647	.62108	33.531	26.982	.261	1442.4
175.0	-1.634	.62153	33.540	26.989	.266	1442.5
180.0	-1.634	.62166	33.545	26.993	.272	1442.6
182.3	-1.621	.62205	33.552	26.999	.274	1442.7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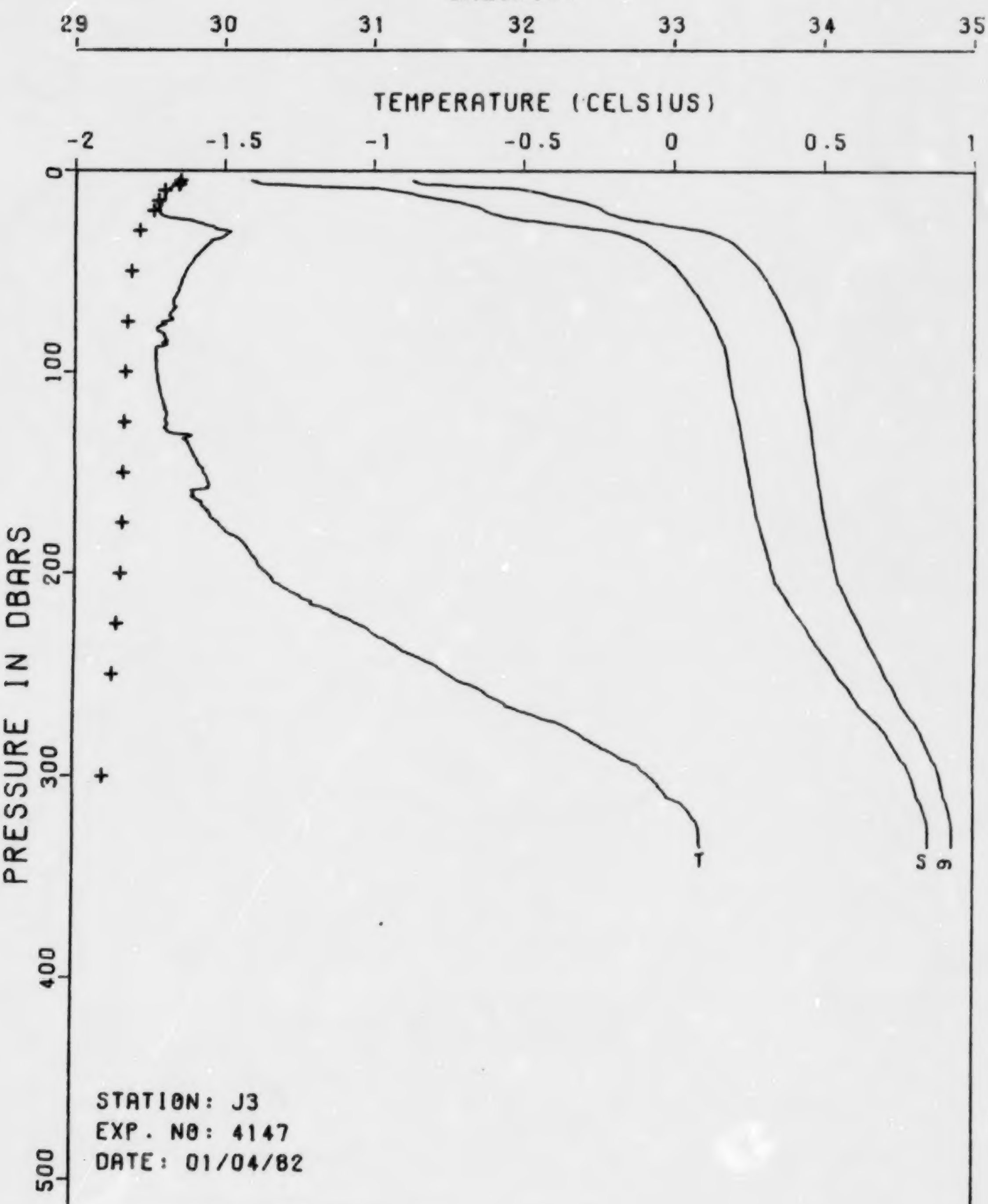
28
SIGMA-T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1
PRESSURE IN DBARS
0
100
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STATION: J3
EXP. NO: 4147
DATE: 01/04/82
+ = SURFACE FREEZING POINT
22
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE J3   EXPERIMENT 4147

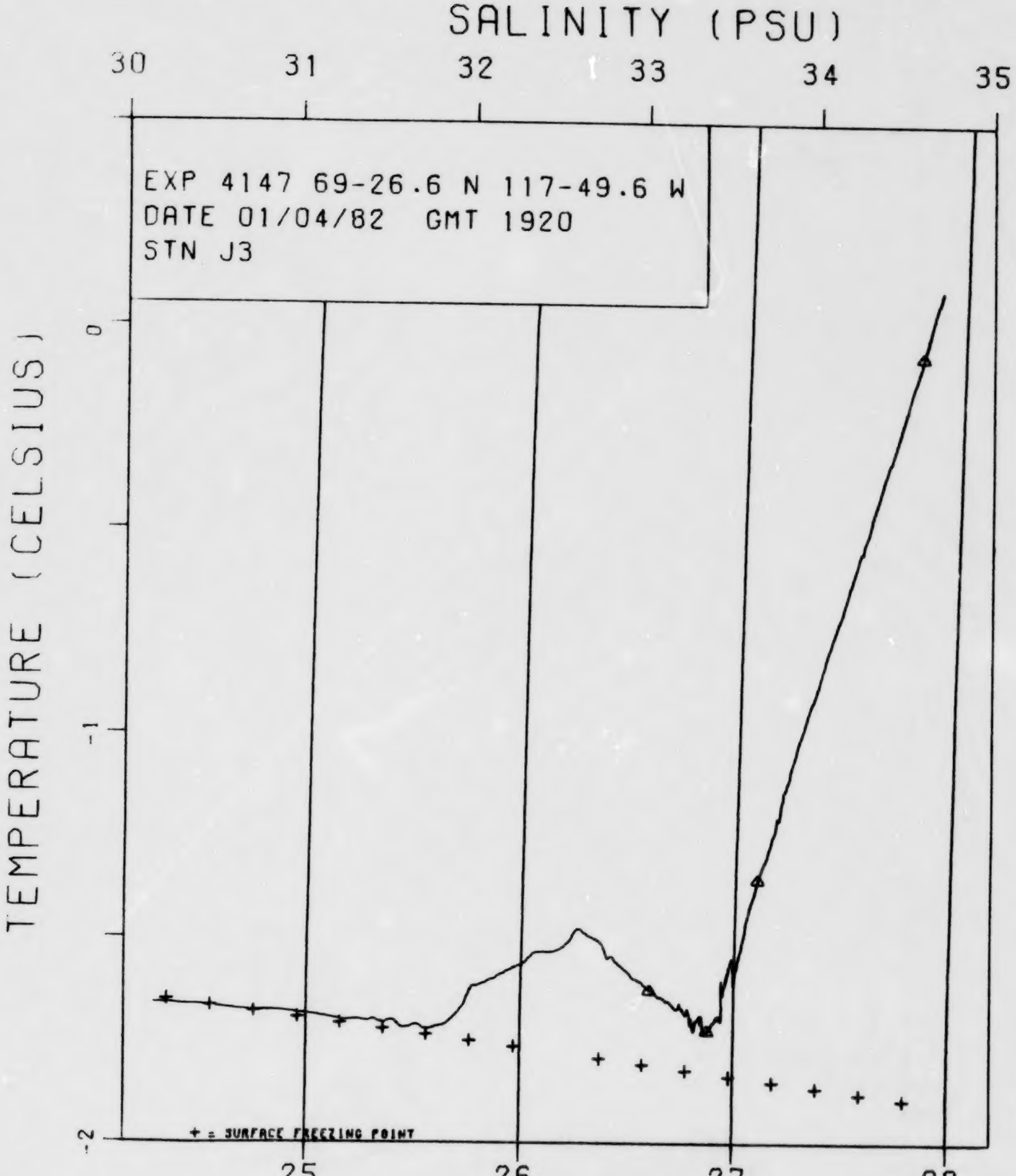
LAT.N. 69-26-35   LON.W. 117-49-35   DATE 1/ 4/82   G.M.T. 1920

ICE THICKNESS 1.6 M   WATER DEPTH 335 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.8	-1.660	.56254	30.162	24.262	.018	1434.9
5.0	-1.660	.56228	30.167	24.250	.018	1434.9
6.0	-1.660	.56261	30.186	24.266	.022	1434.9
7.0	-1.663	.56514	30.338	24.389	.026	1435.1
8.0	-1.675	.57011	30.642	24.636	.029	1435.5
9.0	-1.685	.57665	31.038	24.958	.032	1436.0
10.0	-1.691	.57810	31.129	25.032	.035	1436.2
11.0	-1.699	.57968	31.230	25.114	.038	1436.3
12.0	-1.702	.58054	31.263	25.157	.041	1436.3
13.0	-1.699	.58155	31.339	25.203	.044	1436.5
14.0	-1.701	.58294	31.423	25.271	.046	1436.6
15.0	-1.707	.58414	31.500	25.334	.049	1436.7
16.0	-1.715	.58544	31.584	25.402	.052	1436.8
17.0	-1.718	.58620	31.632	25.441	.054	1436.8
18.0	-1.710	.58733	31.690	25.488	.057	1437.0
19.0	-1.722	.58771	31.725	25.517	.059	1437.0
20.0	-1.725	.58806	31.748	25.536	.062	1437.0
21.0	-1.720	.58864	31.776	25.559	.064	1437.1
22.0	-1.714	.58959	31.826	25.599	.066	1437.2
23.0	-1.702	.59066	31.876	25.639	.069	1437.4
24.0	-1.662	.59281	31.959	25.706	.071	1437.7
25.0	-1.613	.59512	32.043	25.773	.073	1438.1
27.5	-1.557	.60075	32.314	25.992	.078	1438.7
30.0	-1.498	.60635	32.579	26.205	.083	1439.4
32.5	-1.500	.60848	32.705	26.308	.088	1439.6
35.0	-1.550	.60903	32.791	26.379	.092	1439.6
37.5	-1.560	.60980	32.846	26.424	.096	1439.6
40.0	-1.576	.61023	32.888	26.458	.100	1439.7
42.5	-1.595	.61062	32.931	26.494	.104	1439.7
45.0	-1.605	.61119	32.974	26.529	.107	1439.7
47.5	-1.617	.61159	33.010	26.558	.111	1439.8
50.0	-1.627	.61188	33.036	26.580	.115	1439.8
55.0	-1.646	.61253	33.093	26.627	.122	1439.9
60.0	-1.651	.61327	33.140	26.665	.129	1440.0
65.0	-1.672	.61370	33.186	26.703	.135	1440.0
70.0	-1.672	.61445	33.227	26.737	.142	1440.2
75.0	-1.698	.61468	33.267	26.769	.148	1440.2
80.0	-1.722	.61476	33.295	26.793	.155	1440.2
85.0	-1.687	.61599	33.326	26.817	.161	1440.5
90.0	-1.731	.61563	33.350	26.838	.167	1440.4
95.0	-1.725	.61597	33.361	26.846	.173	1440.5
100.0	-1.725	.61617	33.370	26.854	.179	1440.6
105.0	-1.720	.61649	33.360	26.862	.184	1440.7
110.0	-1.713	.61688	33.393	26.872	.190	1440.9

SITE J3   EXPERIMENT 4147

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.701	.61744	33.409	26.885	.196	1441.0
120.0	-1.692	.61789	33.423	26.896	.202	1441.2
125.0	-1.697	.61809	33.437	26.906	.207	1441.3
130.0	-1.692	.61850	33.453	26.921	.213	1441.4
135.0	-1.618	.62013	33.464	26.927	.219	1441.8
140.0	-1.604	.62066	33.476	26.937	.224	1442.0
145.0	-1.587	.62118	33.484	26.943	.230	1442.2
150.0	-1.567	.62184	33.498	26.954	.235	1442.4
155.0	-1.553	.62231	33.507	26.961	.240	1442.5
160.0	-1.607	.62160	33.523	26.975	.246	1442.4
165.0	-1.572	.62247	33.532	26.981	.251	1442.6
170.0	-1.553	.62315	33.548	26.994	.256	1442.8
175.0	-1.517	.62416	33.564	27.006	.261	1443.1
180.0	-1.488	.62505	33.580	27.018	.267	1443.4
185.0	-1.433	.62659	33.607	27.039	.272	1443.7
190.0	-1.409	.62739	33.624	27.051	.277	1443.9
195.0	-1.395	.62818	33.641	27.065	.282	1444.2
200.0	-1.353	.62916	33.660	27.079	.286	1444.4
210.0	-1.260	.63226	33.731	27.134	.296	1445.1
220.0	-1.123	.63647	33.818	27.200	.305	1446.1
230.0	-.995	.64057	33.907	27.267	.313	1446.9
240.0	-.864	.64489	34.005	27.342	.320	1447.9
250.0	-.739	.64901	34.097	27.411	.327	1448.7
260.0	-.606	.65338	34.197	27.487	.333	1449.6
270.0	-.448	.65868	34.315	27.575	.338	1450.7
280.0	-.294	.66381	34.430	27.661	.343	1451.7
290.0	-.174	.66775	34.514	27.723	.347	1452.6
300.0	-.069	.67129	34.591	27.780	.350	1453.3
310.0	-.011	.67317	34.627	27.806	.353	1453.8
320.0	.071	.67597	34.687	27.850	.356	1454.4
330.0	.090	.67664	34.697	27.857	.358	1454.7
334.3	.095	.67681	34.699	27.858	.359	1454.8


SALINITY (PSU)
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33
34
35
EXP 4147 69-26.6 N 117-49.6 W
DATE 01/04/82 GMT 1920
STN J3
TEMPERATURE (CELSIUS)
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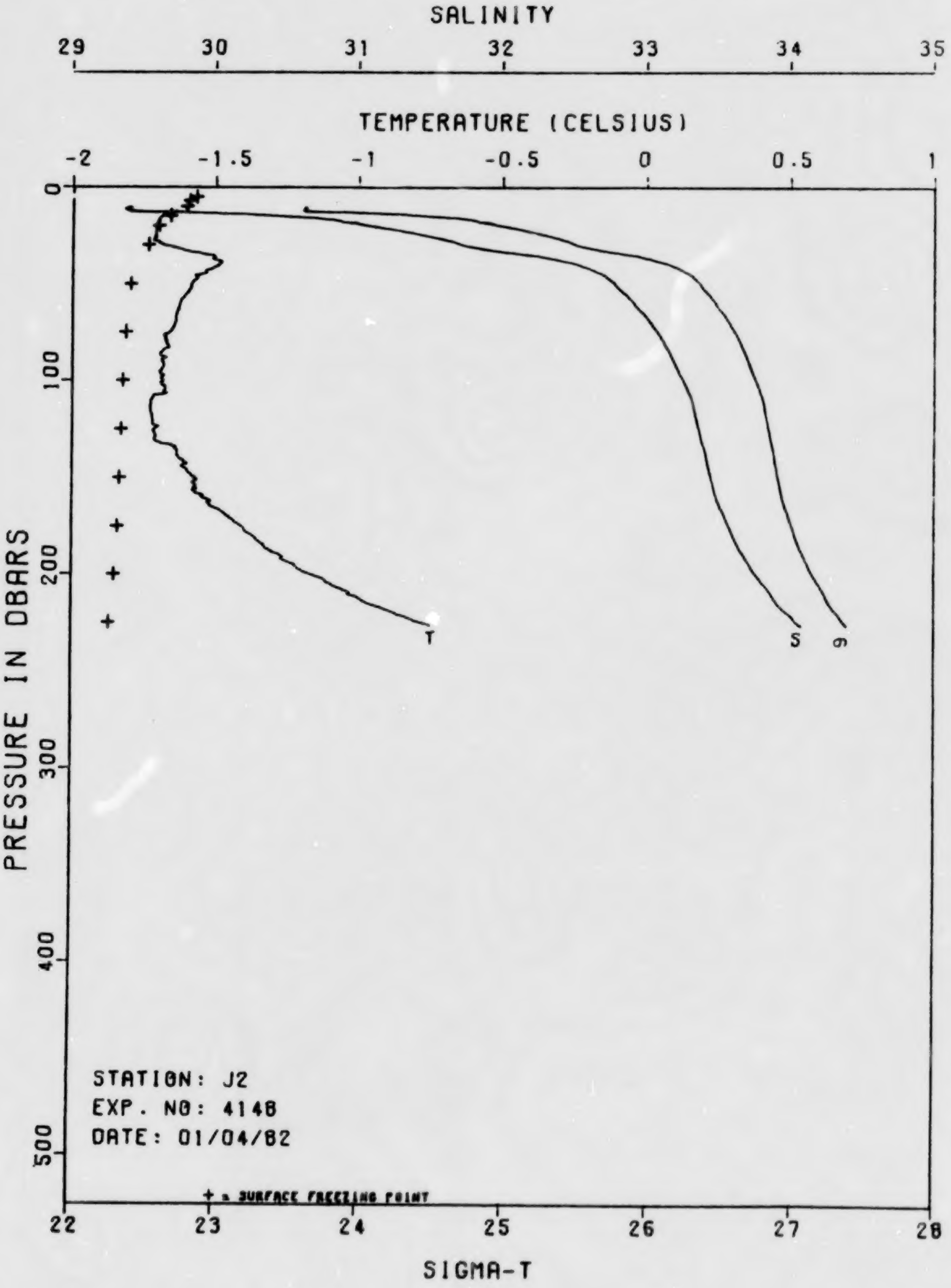
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
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0.5
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PRESSURE IN DBARS
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100
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STATION: J2
EXP. NO: 4148
DATE: 01/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE J2 EXPERIMENT #148

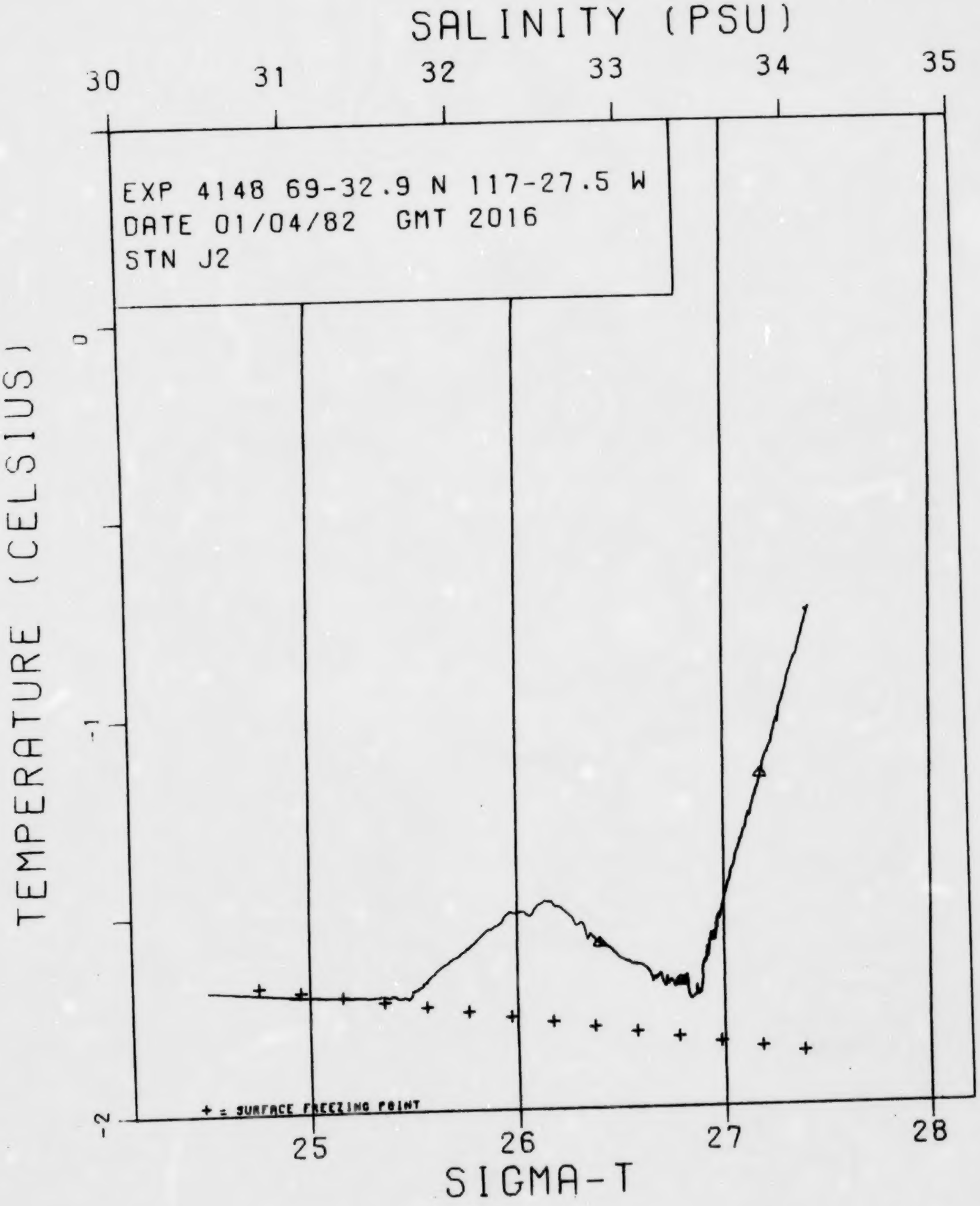
LAT.N. 69-32-54 LON.W. 117-27-30 DATE 1/ 4/82 G.M.T. 2016

ICE THICKNESS 1.6 M WATER DEPTH 229 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.7	-1.639					
5.0	-1.640					
6.0	-1.639					
7.0	-1.640					
8.0	-1.641					
9.0	-1.641					
10.0	-1.641					
11.0	-1.641					
12.0	-1.642					
13.0	-1.647					
14.0	-1.678					
15.0	-1.689	.56666	30.448	24.479	.074	1435.3
16.0	-1.697	.57106	30.716	24.697	.077	1435.6
17.0	-1.703	.57315	30.845	24.801	.080	1435.8
18.0	-1.703	.57393	30.891	24.839	.083	1435.9
19.0	-1.708	.57564	30.995	24.924	.086	1436.0
20.0	-1.707	.57726	31.090	25.001	.089	1436.2
21.0	-1.710	.57826	31.151	25.050	.092	1436.3
22.0	-1.712	.57994	31.252	25.132	.095	1436.4
23.0	-1.711	.58122	31.326	25.192	.098	1436.5
24.0	-1.712	.58233	31.393	25.247	.101	1436.7
25.0	-1.711	.58359	31.465	25.306	.103	1436.8
27.5	-1.713	.58613	31.617	25.429	.110	1437.0
30.0	-1.686	.58839	31.720	25.512	.116	1437.3
32.5	-1.617	.59286	31.909	25.664	.122	1438.0
35.0	-1.536	.59876	32.168	25.873	.128	1438.8
37.5	-1.512	.60276	32.378	26.042	.133	1439.2
40.0	-1.488	.60564	32.520	26.157	.137	1439.6
42.5	-1.515	.60678	32.615	26.235	.142	1439.6
45.0	-1.540	.60769	32.695	26.301	.146	1439.6
47.5	-1.563	.60804	32.739	26.337	.150	1439.6
50.0	-1.584	.60843	32.784	26.374	.155	1439.6
55.0	-1.599	.60936	32.853	26.431	.163	1439.7
60.0	-1.626	.61004	32.919	26.485	.170	1439.8
65.0	-1.639	.61081	32.977	26.533	.178	1439.9
70.0	-1.639	.61182	33.034	26.579	.185	1440.1
75.0	-1.659	.61228	33.080	26.616	.192	1440.1
80.0	-1.674	.61278	33.124	26.652	.199	1440.2
85.0	-1.685	.61324	33.160	26.682	.206	1440.3
90.0	-1.689	.61377	33.193	26.709	.213	1440.4
95.0	-1.688	.61437	33.225	26.735	.219	1440.5
100.0	-1.683	.61511	33.260	26.763	.226	1440.7
105.0	-1.673	.61586	33.291	26.788	.232	1440.8
110.0	-1.726	.61540	33.320	26.813	.238	1440.7

SITE J2 EXPERIMENT 4146

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.726	.61567	33.332	26.623	.244	1440.8
120.0	-1.721	.61610	33.348	26.836	.250	1440.9
125.0	-1.712	.61658	33.364	26.849	.256	1441.1
130.0	-1.712	.61689	33.379	26.861	.262	1441.2
135.0	-1.638	.61872	33.402	26.876	.268	1441.7
140.0	-1.623	.61932	33.418	26.890	.274	1441.8
145.0	-1.612	.61981	33.431	26.901	.279	1442.0
150.0	-1.566	.62097	33.446	26.912	.285	1442.3
155.0	-1.568	.62133	33.466	26.928	.290	1442.4
160.0	-1.549	.62206	33.485	26.943	.296	1442.6
165.0	-1.517	.62315	33.510	26.962	.301	1442.9
170.0	-1.455	.62494	33.544	26.988	.307	1443.3
175.0	-1.406	.62641	33.575	27.012	.312	1443.6
180.0	-1.365	.62780	33.605	27.035	.317	1444.0
185.0	-1.327	.62912	33.636	27.059	.322	1444.3
190.0	-1.269	.63099	33.678	27.091	.327	1444.7
195.0	-1.217	.63276	33.722	27.125	.331	1445.1
200.0	-1.156	.63469	33.765	27.156	.336	1445.5
210.0	-1.026	.63917	33.873	27.241	.344	1446.4
220.0	-.865	.64441	33.990	27.330	.352	1447.5
226.4	-.740	.64843	34.079	27.397	.357	1448.3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EXP 4148 69-32.9 N 117-27.5 W
DATE 01/04/82 GMT 2016
STN J2
TEMPERATURE (CELSIUS)
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-2
+ = SURFACE FREEZING POINT
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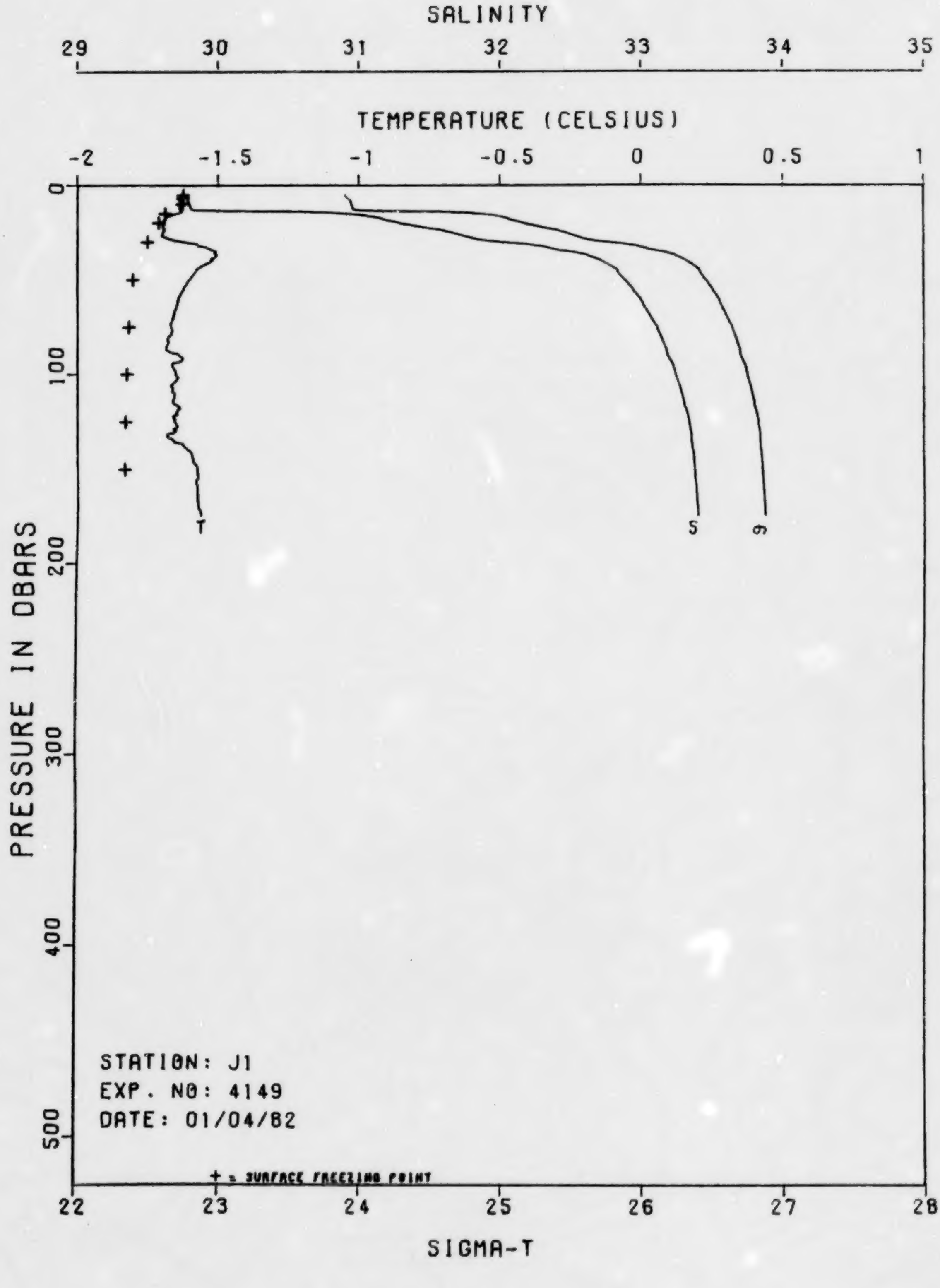
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
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PRESSURE IN DBARS
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STATION: J1
EXP. NO: 4149
DATE: 01/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE 01 EXPERIMENT 4149

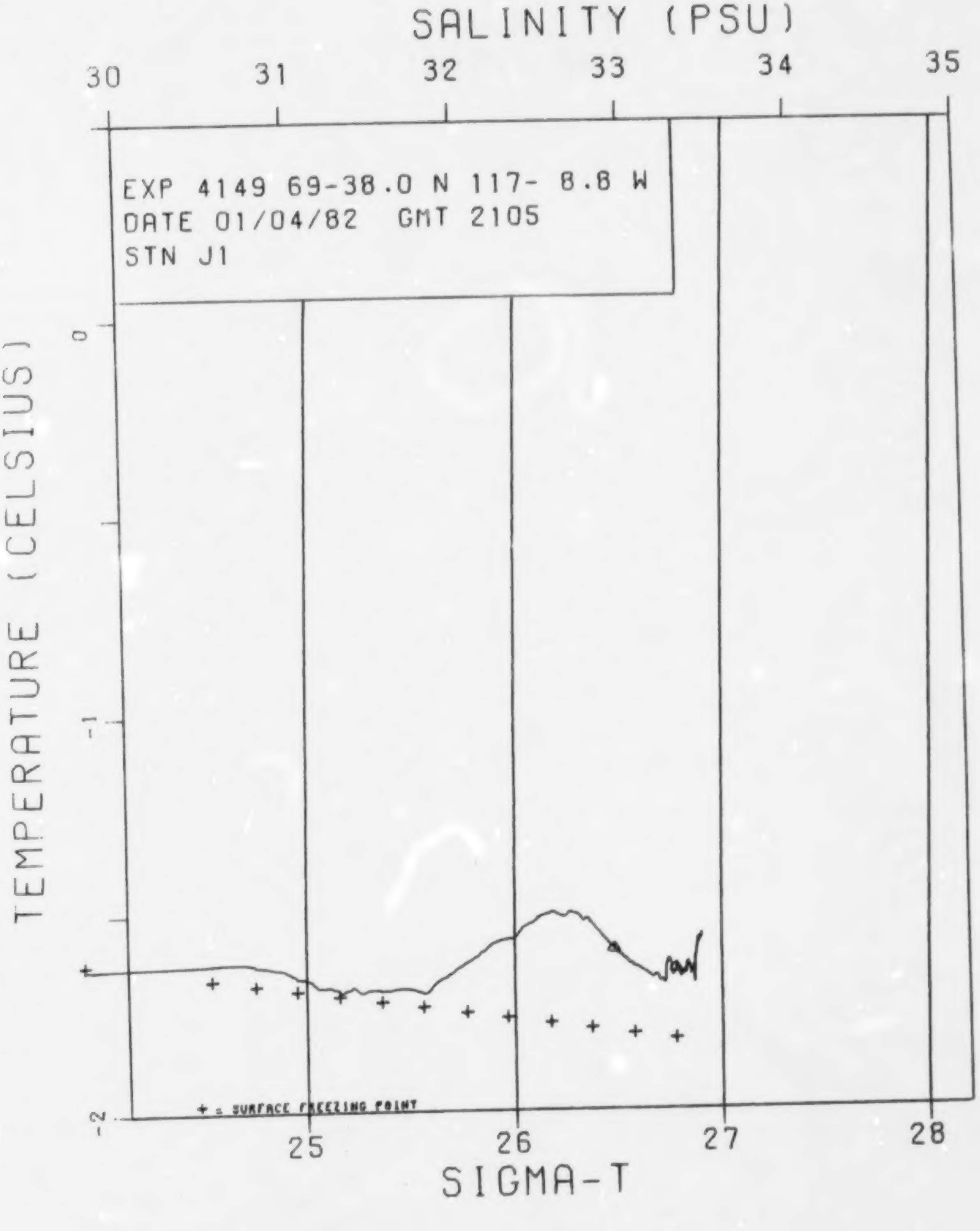
LAT.N. 69-38- 0 LON.W. 117- 8-47 DATE 1/ 4/82 G.M.T. 2105

ICE THICKNESS 1.6 M WATER DEPTH 177 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.1	-1.634	.55545	29.739	23.903	.020	1434.4
6.0	-1.634	.55559	29.747	23.909	.024	1434.4
7.0	-1.636	.55578	29.759	23.919	.028	1434.4
8.0	-1.636	.55626	29.788	23.942	.032	1434.5
9.0	-1.637	.55642	29.796	23.949	.036	1434.5
10.0	-1.636	.55648	29.799	23.951	.040	1434.5
11.0	-1.636	.55655	29.803	23.954	.044	1434.6
12.0	-1.636	.55667	29.809	23.960	.048	1434.6
13.0	-1.637	.55676	29.814	23.963	.052	1434.6
14.0	-1.625	.57011	30.587	24.591	.055	1435.8
15.0	-1.642	.57477	30.878	24.827	.059	1436.1
16.0	-1.666	.57705	31.037	24.957	.062	1436.2
17.0	-1.690	.57817	31.127	25.031	.065	1436.3
18.0	-1.696	.57907	31.176	25.071	.068	1436.4
19.0	-1.693	.57986	31.230	25.114	.070	1436.4
20.0	-1.694	.58094	31.294	25.166	.073	1436.5
21.0	-1.700	.58207	31.366	25.225	.076	1436.6
22.0	-1.692	.58342	31.437	25.283	.079	1436.8
23.0	-1.695	.58469	31.515	25.346	.081	1436.9
24.0	-1.690	.58625	31.601	25.415	.084	1437.1
25.0	-1.692	.58718	31.658	25.462	.086	1437.1
27.5	-1.698	.58914	31.779	25.560	.093	1437.3
30.0	-1.632	.59387	31.986	25.727	.098	1438.0
32.5	-1.559	.60071	32.311	25.989	.104	1438.8
35.0	-1.506	.60464	32.483	26.128	.109	1439.3
37.5	-1.502	.60738	32.639	26.255	.113	1439.6
40.0	-1.518	.60858	32.726	26.325	.117	1439.7
42.5	-1.552	.60900	32.787	26.376	.122	1439.7
45.0	-1.576	.60945	32.839	26.419	.126	1439.7
47.5	-1.586	.60960	32.857	26.433	.130	1439.7
50.0	-1.599	.60991	32.888	26.459	.133	1439.7
55.0	-1.623	.61053	32.948	26.509	.141	1439.8
60.0	-1.640	.61122	33.005	26.555	.149	1439.9
65.0	-1.647	.61164	33.035	26.580	.156	1439.9
70.0	-1.656	.61223	33.079	26.616	.163	1440.0
75.0	-1.665	.61283	33.120	26.649	.170	1440.1
80.0	-1.674	.61319	33.147	26.672	.177	1440.2
85.0	-1.683	.61354	33.176	26.695	.183	1440.3
90.0	-1.636	.61481	33.195	26.710	.190	1440.6
95.0	-1.666	.61488	33.231	26.739	.197	1440.6
100.0	-1.648	.61563	33.251	26.755	.203	1440.8
105.0	-1.661	.61582	33.274	26.774	.209	1440.9
110.0	-1.654	.61638	33.296	26.792	.216	1441.0
115.0	-1.659	.61655	33.309	26.803	.222	1441.1

SITE J1   EXPERIMENT 4149

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.646	.61721	33.330	26.820	.228	1441.3
125.0	-1.652	.61744	33.348	26.834	.234	1441.3
130.0	-1.645	.61774	33.355	26.839	.240	1441.5
135.0	-1.655	.61771	33.361	26.845	.246	1441.5
140.0	-1.606	.61890	33.375	26.854	.252	1441.8
145.0	-1.586	.61938	33.379	26.858	.257	1442.0
150.0	-1.572	.61983	33.384	26.862	.263	1442.2
155.0	-1.571	.61997	33.389	26.865	.269	1442.3
160.0	-1.572	.62012	33.396	26.871	.275	1442.4
165.0	-1.573	.62019	33.397	26.872	.281	1442.4
170.0	-1.568	.62040	33.402	26.876	.287	1442.6
174.4	-1.560	.62066	33.405	26.878	.292	1442.7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EXP 4149 69-38.0 N 117- 8.8 W
DATE 01/04/82 GMT 2105
STN J1
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
25
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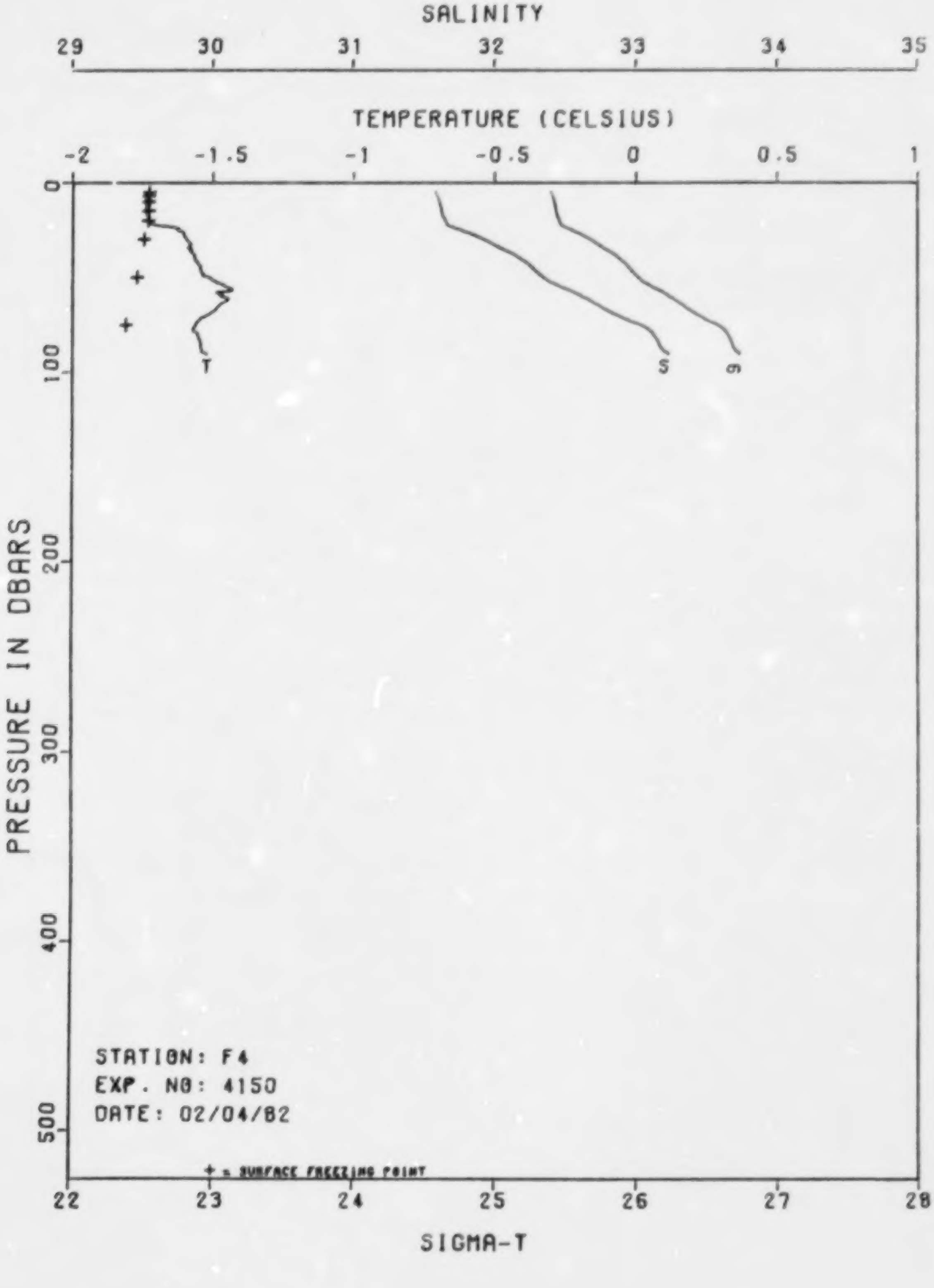
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
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STATION: F4
EXP. NO: 4150
DATE: 02/04/82
+ = SURFACE FREEZING POINT
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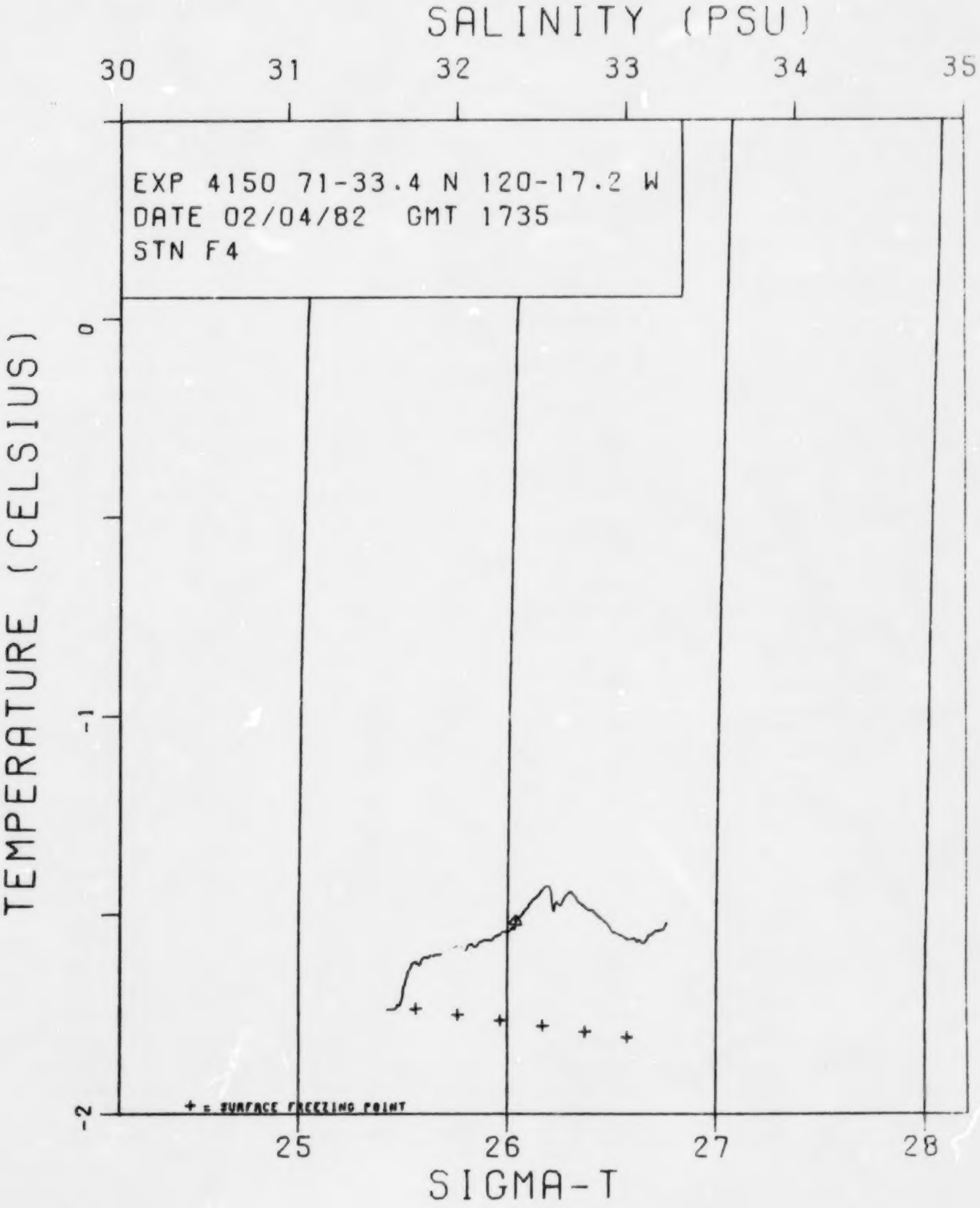
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE F4 EXPERIMENT 4150

LAT.N. 71-33-24 LON.W. 120-17-12 DATE 2/ 4/82 G.M.T. 1735

ICE THICKNESS 1.5 M WATER DEPTH 95 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.9	-1.738	.58482	31.579	25.398	.013	1436.5
5.0	-1.738	.58482	31.579	25.399	.013	1436.5
6.0	-1.737	.58497	31.586	25.405	.015	1436.5
7.0	-1.738	.58510	31.594	25.411	.018	1436.5
8.0	-1.738	.58523	31.601	25.417	.021	1436.6
9.0	-1.736	.58532	31.606	25.420	.023	1436.6
10.0	-1.739	.58537	31.610	25.423	.026	1436.6
11.0	-1.737	.58547	31.613	25.426	.028	1436.6
12.0	-1.738	.58554	31.617	25.429	.031	1436.6
13.0	-1.736	.58560	31.620	25.432	.033	1436.7
14.0	-1.736	.58567	31.624	25.435	.036	1436.7
15.0	-1.736	.58573	31.626	25.437	.038	1436.7
16.0	-1.736	.58578	31.629	25.439	.041	1436.7
17.0	-1.737	.58585	31.632	25.441	.043	1436.8
18.0	-1.730	.58605	31.636	25.445	.046	1436.8
19.0	-1.726	.58634	31.648	25.454	.048	1436.9
20.0	-1.730	.58638	31.654	25.460	.051	1436.9
21.0	-1.726	.58653	31.658	25.463	.053	1436.9
22.0	-1.716	.58679	31.664	25.467	.056	1437.0
23.0	-1.666	.58753	31.673	25.474	.058	1437.2
24.0	-1.633	.58922	31.716	25.508	.061	1437.5
25.0	-1.624	.59014	31.760	25.544	.063	1437.6
27.5	-1.601	.59203	31.846	25.613	.069	1437.9
30.0	-1.594	.59351	31.924	25.676	.075	1438.1
32.5	-1.578	.59488	31.987	25.727	.081	1438.3
35.0	-1.587	.59586	32.052	25.780	.086	1438.4
37.5	-1.571	.59736	32.123	25.837	.092	1438.6
40.0	-1.566	.59843	32.178	25.882	.097	1438.7
42.5	-1.553	.59957	32.230	25.924	.102	1438.9
45.0	-1.541	.60051	32.272	25.957	.108	1439.0
47.5	-1.540	.60109	32.303	25.983	.113	1439.1
50.0	-1.513	.60232	32.345	26.016	.118	1439.4
55.0	-1.455	.60553	32.468	26.114	.127	1439.9
60.0	-1.473	.60778	32.618	26.236	.136	1440.1
65.0	-1.479	.60984	32.742	26.338	.145	1440.3
70.0	-1.519	.61129	32.870	26.442	.153	1440.4
75.0	-1.561	.61335	33.035	26.577	.161	1440.5
80.0	-1.551	.61512	33.125	26.651	.168	1440.8
85.0	-1.543	.61601	33.166	26.684	.174	1440.9
90.0	-1.529	.61735	33.226	26.732	.181	1441.2
90.8	-1.519	.61771	33.237	26.740	.182	1441.3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EXP 4150 71-33.4 N 120-17.2 W
DATE 02/04/82 GMT 1735
STN F4
TEMPERATURE (CELSIUS)
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+ = SURFACE FREEZING POINT
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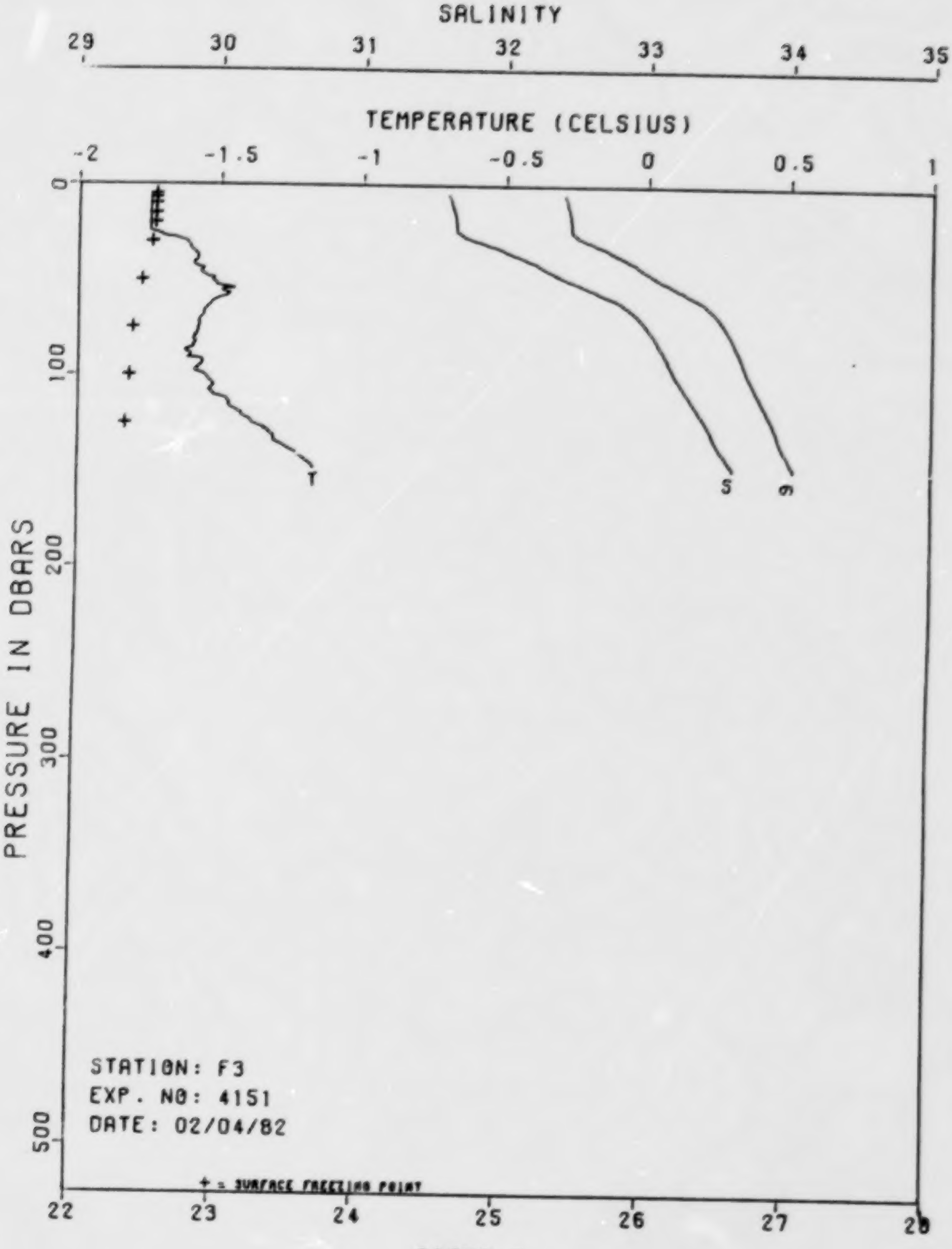
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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-1
-0.5
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0.5
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PRESSURE IN DBARS
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100
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STATION: F3
EXP. NO: 4151
DATE: 02/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE F3 EXPERIMENT 4151

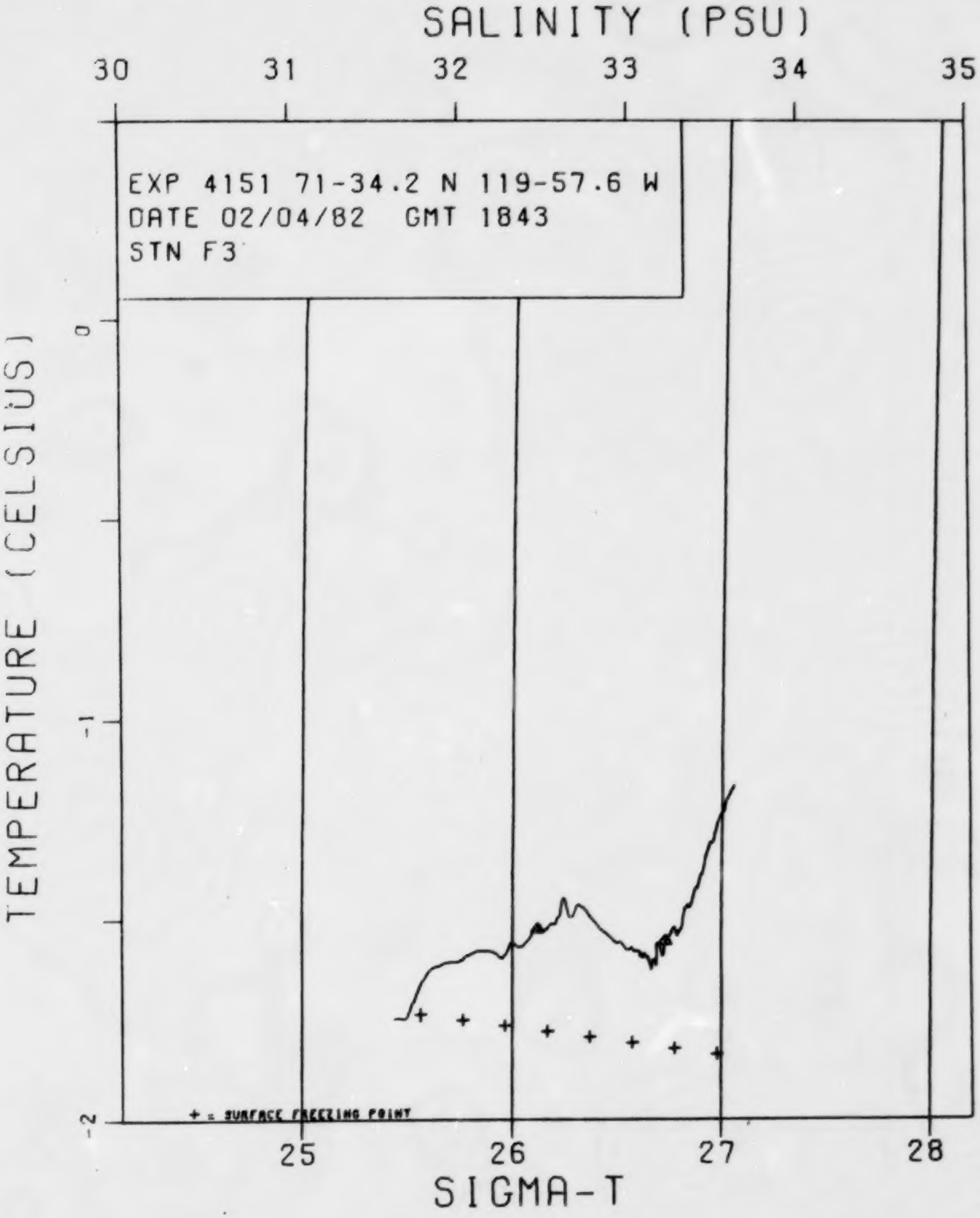
LAT.N. 71-34-11 LON.W. 119-57-35 DATE 2/ 4/82 G.M.T. 1843

ICE THICKNESS 1.7 M WATER DEPTH 152 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.7	-1.747	.58492	31.595	25.412	.012	1436.5
5.0	-1.747	.58492	31.594	25.411	.013	1436.5
6.0	-1.747	.58504	31.601	25.416	.015	1436.5
7.0	-1.747	.58517	31.608	25.422	.018	1436.5
8.0	-1.747	.58528	31.614	25.427	.020	1436.5
9.0	-1.747	.58542	31.622	25.434	.023	1436.6
10.0	-1.748	.58535	31.618	25.431	.026	1436.6
11.0	-1.748	.58546	31.624	25.436	.028	1436.6
12.0	-1.748	.58557	31.630	25.440	.031	1436.6
13.0	-1.749	.58567	31.636	25.445	.033	1436.6
14.0	-1.749	.58573	31.639	25.448	.036	1436.7
15.0	-1.749	.58579	31.642	25.450	.038	1436.7
16.0	-1.750	.58588	31.648	25.454	.041	1436.7
17.0	-1.749	.58592	31.649	25.456	.043	1436.7
18.0	-1.749	.58598	31.652	25.458	.046	1436.7
19.0	-1.749	.58599	31.652	25.458	.048	1436.8
20.0	-1.749	.58603	31.653	25.459	.051	1436.8
21.0	-1.749	.58605	31.655	25.460	.053	1436.8
22.0	-1.749	.58608	31.655	25.461	.056	1436.8
23.0	-1.750	.58610	31.657	25.462	.058	1436.8
24.0	-1.750	.58613	31.657	25.463	.061	1436.8
25.0	-1.743	.58646	31.670	25.472	.063	1436.9
27.5	-1.690	.58633	31.722	25.514	.069	1437.3
30.0	-1.617	.59159	31.836	25.605	.075	1437.8
32.5	-1.606	.59351	31.935	25.685	.081	1438.1
35.0	-1.593	.59502	32.010	25.746	.087	1438.3
37.5	-1.577	.59685	32.099	25.818	.092	1438.5
40.0	-1.582	.59802	32.171	25.877	.098	1438.6
42.5	-1.590	.59910	32.243	25.935	.103	1438.7
45.0	-1.565	.60068	32.308	25.987	.108	1439.0
47.5	-1.555	.60204	32.376	26.042	.113	1439.2
50.0	-1.525	.60388	32.450	26.102	.118	1439.5
55.0	-1.497	.60747	32.629	26.246	.127	1439.9
60.0	-1.509	.60983	32.779	26.368	.136	1440.2
65.0	-1.549	.61080	32.877	26.449	.144	1440.2
70.0	-1.566	.61171	32.949	26.508	.151	1440.3
75.0	-1.576	.61255	33.005	26.553	.159	1440.4
80.0	-1.590	.61317	33.053	26.593	.166	1440.5
85.0	-1.593	.61377	33.090	26.623	.173	1440.6
90.0	-1.602	.61435	33.130	26.656	.180	1440.7
95.0	-1.569	.61561	33.165	26.683	.187	1441.0
100.0	-1.552	.61658	33.200	26.711	.193	1441.2
105.0	-1.523	.61791	33.244	26.746	.200	1441.5
110.0	-1.523	.61873	33.289	26.783	.206	1441.6

SITE F3 EXPERIMENT 4151

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.462	.62072	33.336	26.819	.212	1442.1
120.0	-1.421	.62222	33.376	26.851	.218	1442.4
125.0	-1.382	.62377	33.421	26.886	.224	1442.7
130.0	-1.318	.62565	33.456	26.913	.230	1443.2
135.0	-1.298	.62663	33.488	26.938	.235	1443.4
140.0	-1.231	.62884	33.540	26.978	.241	1443.8
145.0	-1.188	.63049	33.586	27.014	.246	1444.2
148.4	-1.166	.63136	33.610	27.033	.249	1444.4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EXP 4151 71-34.2 N 119-57.6 W
DATE 02/04/82 GMT 1843
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+ = SURFACE FREEZING POINT
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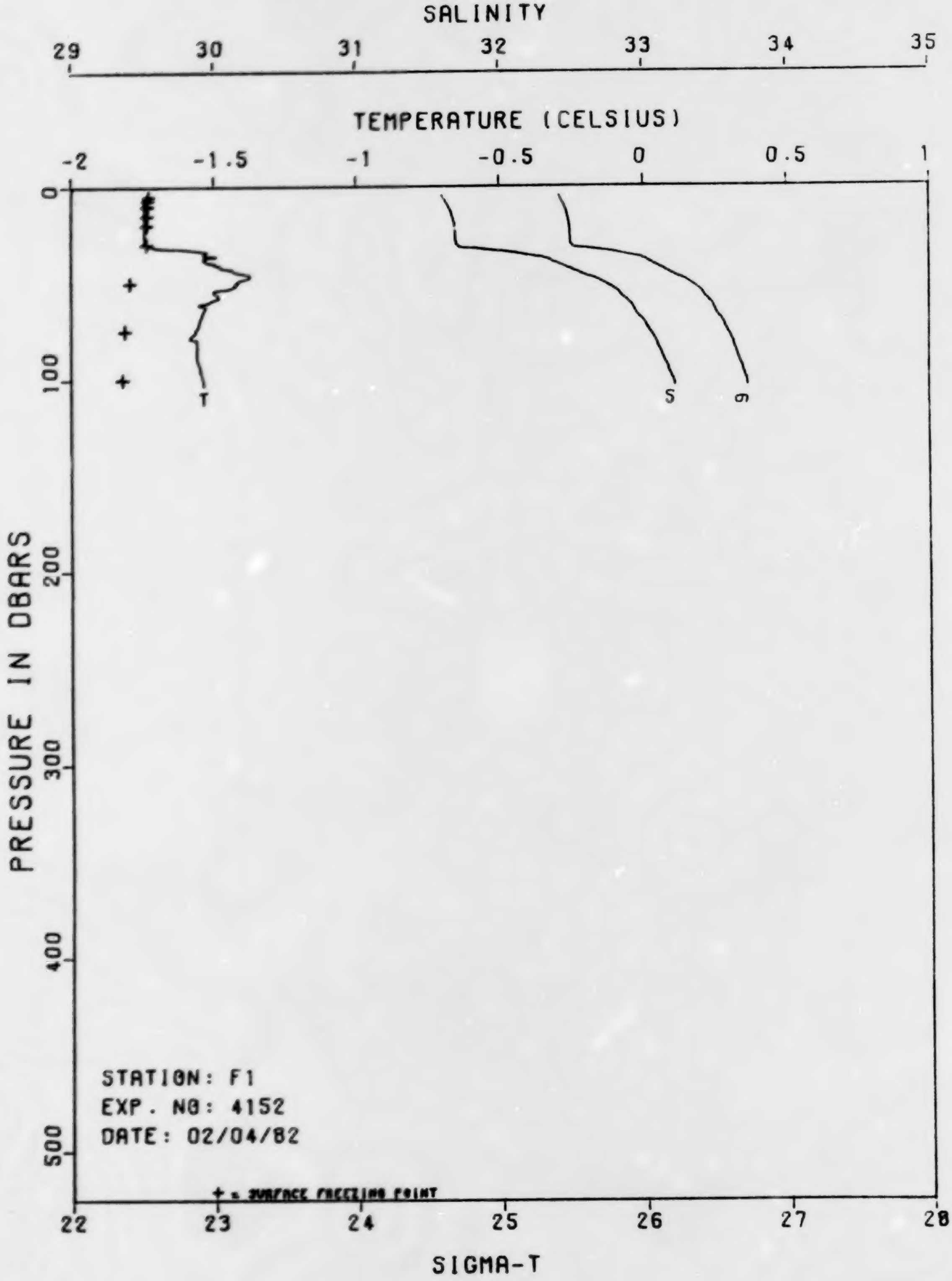
28
SIGMA-T


SALINITY
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30
31
32
33
34
35
TEMPERATURE (CELSIUS)
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-1
-0.5
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0.5
1
PRESSURE IN DBARS
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200
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STATION: F1
EXP. NO: 4152
DATE: 02/04/82
+ = SURFACE FREEZING POINT
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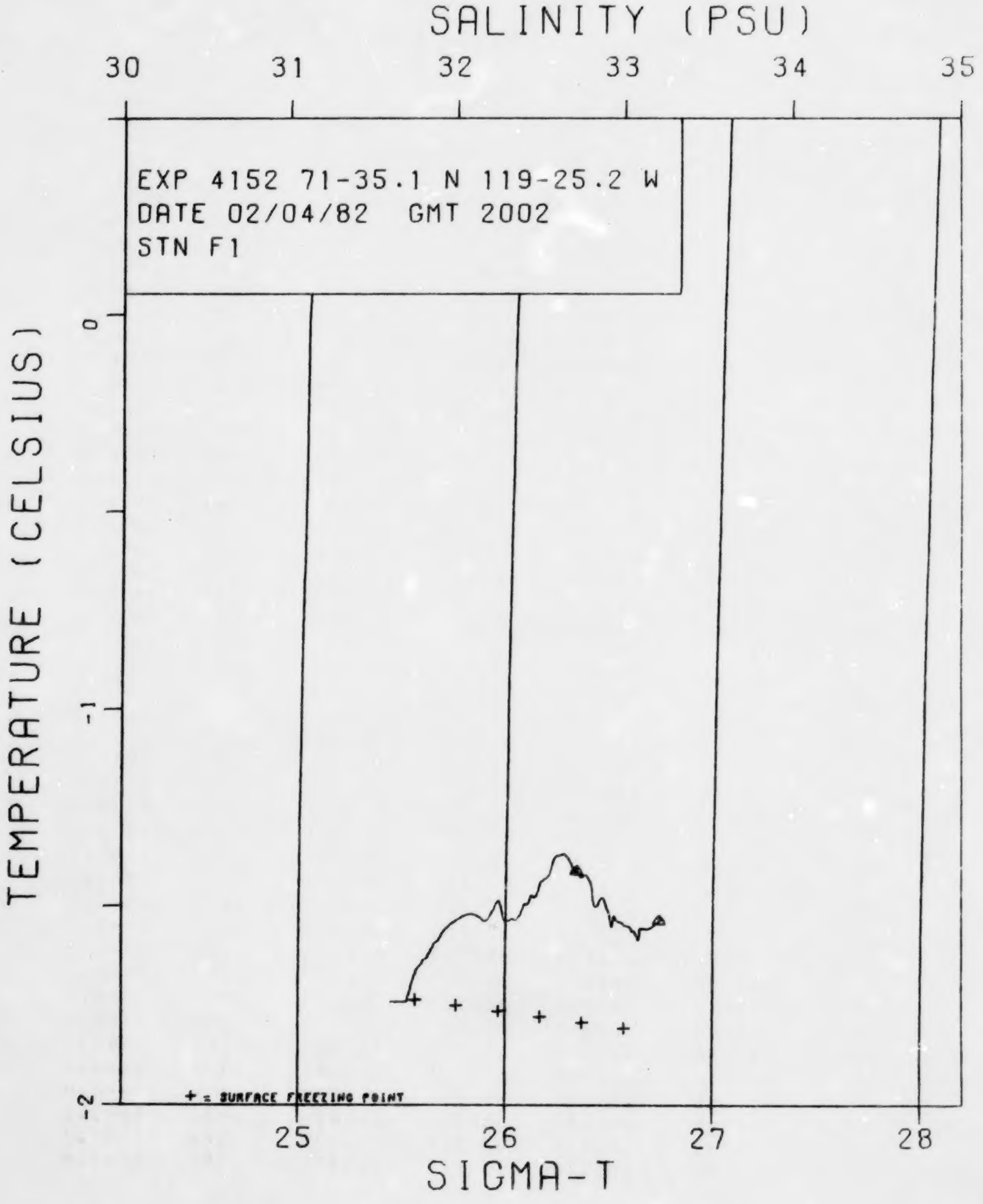
SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE F1   EXPERIMENT 4152

LAT.N. 71-35- 5   LON.W. 119-25-12   DATE 2/ 4/82 G.M.T. 2002

ICE THICKNESS 1.5 M   WATER DEPTH 108 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.0	-1.742	.58517	31.604	25.419	.013	1436.5
5.0	-1.742	.58517	31.604	25.419	.013	1436.5
6.0	-1.742	.58528	31.611	25.424	.015	1436.5
7.0	-1.742	.58545	31.620	25.432	.018	1436.5
8.0	-1.743	.58560	31.628	25.439	.020	1436.6
9.0	-1.742	.58576	31.637	25.446	.023	1436.6
10.0	-1.742	.58592	31.645	25.452	.025	1436.6
11.0	-1.742	.58608	31.654	25.460	.028	1436.7
12.0	-1.741	.58621	31.661	25.465	.030	1436.7
13.0	-1.741	.58631	31.666	25.469	.033	1436.7
14.0	-1.742	.58639	31.671	25.474	.035	1436.7
15.0	-1.742	.58648	31.676	25.477	.038	1436.8
16.0	-1.742	.58653	31.679	25.480	.040	1436.8
17.0	-1.742	.58661	31.682	25.482	.043	1436.8
18.0	-1.742	.58669	31.686	25.485	.045	1436.8
19.0	-1.742	.58679	31.691	25.490	.048	1436.8
20.0	-1.741	.58681	31.692	25.490	.050	1436.9
21.0	-1.741	.58685	31.693	25.491	.053	1436.9
22.0	-1.741	.58689	31.695	25.493	.055	1436.9
23.0	-1.742	.58694	31.698	25.495	.058	1436.9
24.0	-1.741	.58696	31.699	25.496	.060	1436.9
25.0	-1.741	.58699	31.699	25.496	.063	1437.0
27.5	-1.741	.58703	31.700	25.497	.069	1437.0
30.0	-1.737	.58719	31.704	25.500	.075	1437.1
32.5	-1.611	.59193	31.847	25.614	.081	1437.9
35.0	-1.527	.59825	32.130	25.841	.087	1438.7
37.5	-1.536	.60139	32.322	25.998	.092	1439.0
40.0	-1.494	.60356	32.403	26.063	.097	1439.4
42.5	-1.471	.60528	32.478	26.123	.102	1439.6
45.0	-1.410	.60782	32.561	26.189	.106	1440.1
47.5	-1.367	.61008	32.645	26.256	.111	1440.4
50.0	-1.413	.61063	32.726	26.323	.115	1440.4
55.0	-1.500	.61085	32.831	26.411	.123	1440.2
60.0	-1.514	.61184	32.902	26.469	.131	1440.3
65.0	-1.536	.61227	32.949	26.507	.139	1440.3
70.0	-1.549	.61307	33.008	26.555	.146	1440.5
75.0	-1.561	.61359	33.049	26.589	.153	1440.5
80.0	-1.556	.61446	33.092	26.623	.161	1440.7
85.0	-1.557	.61498	33.121	26.647	.167	1440.8
90.0	-1.555	.61555	33.150	26.670	.174	1440.9
95.0	-1.545	.61634	33.182	26.696	.181	1441.1
100.0	-1.537	.61710	33.215	26.723	.188	1441.3
103.8	-1.534	.61738	33.225	26.731	.193	1441.4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EXP 4152 71-35.1 N 119-25.2 W
DATE 02/04/82 GMT 2002
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+ = SURFACE FREEZING POINT
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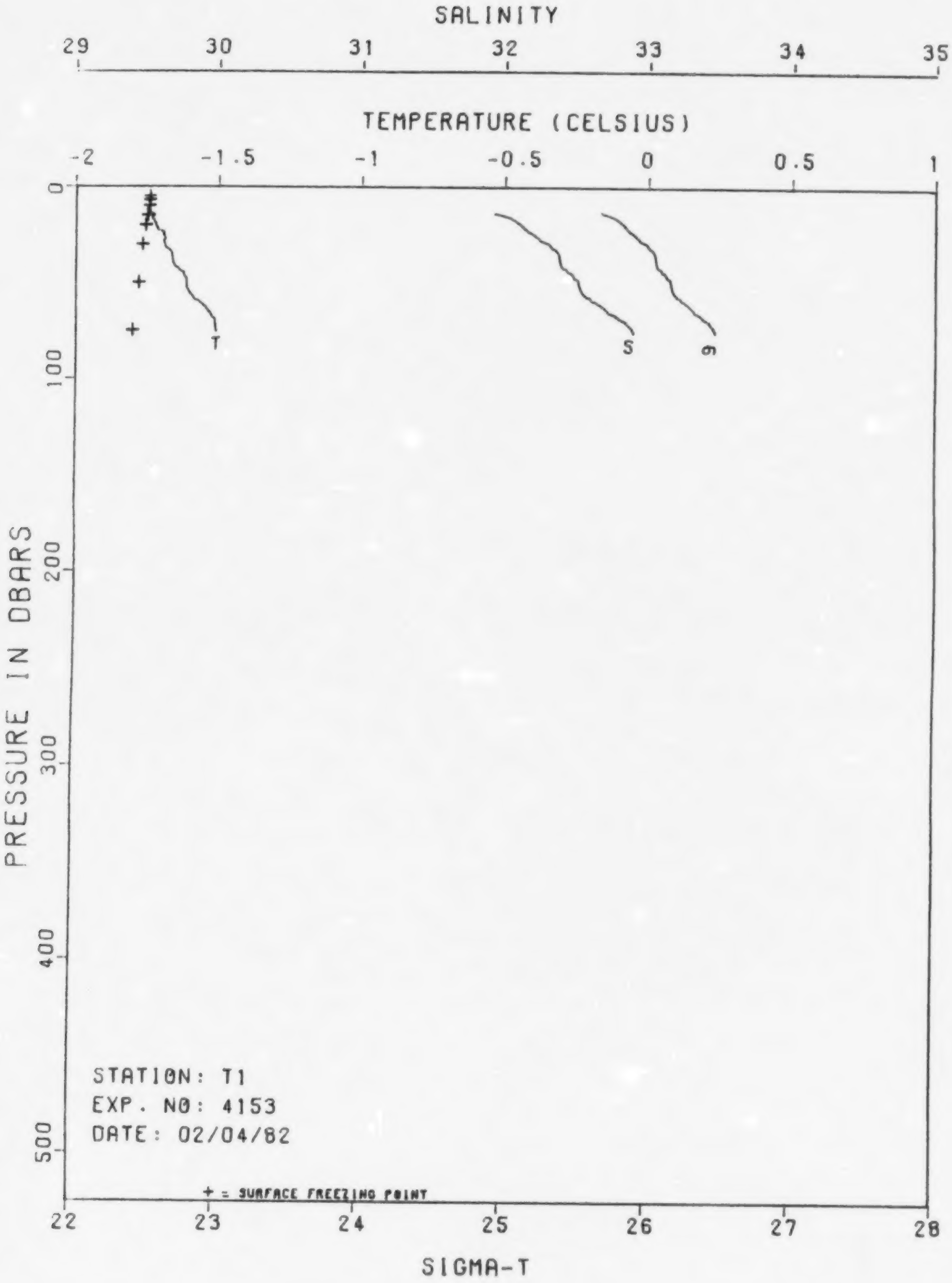
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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-1
-0.5
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0.5
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PRESSURE IN DBARS
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STATION: T1
EXP. NO: 4153
DATE: 02/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

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CRUISE 015-82-022  ARCTIC ISLANDS-82   SITE T1    EXPERIMENT 4153

LAT.N. 72-12-12      LON.W. 119-38-48   DATE  2/ 4/82  G.M.T. 2210

ICE THICKNESS   1.8 M           WATER DEPTH    80  M

PRESSURE    TEMP    COND. R  SALINITY  SIGMAT      DHA     SOUND
 (DBARS)  (DEG.C)                     (KG/M**3)  (DYN.M)   (M/S)

    4.9   -1.747
    5.0   -1.746
    6.0   -1.747
    7.0   -1.747
    8.0   -1.747
    9.0   -1.746
   10.0   -1.746
   11.0   -1.748
   12.0   -1.750
   13.0   -1.748
   14.0   -1.742
   15.0   -1.723   .59215   31.992   25.734     .037    1437.3
   16.0   -1.732   .59271   32.034   25.768     .040    1437.3
   17.0   -1.736   .59302   32.056   25.786     .042    1437.4
   18.0   -1.726   .59362   32.080   25.805     .044    1437.5
   19.0   -1.723   .59393   32.095   25.818     .046    1437.5
   20.0   -1.720   .59434   32.115   25.834     .048    1437.6
   21.0   -1.718   .59460   32.129   25.845     .051    1437.6
   22.0   -1.715   .59487   32.141   25.855     .053    1437.7
   23.0   -1.712   .59524   32.158   25.869     .055    1437.7
   24.0   -1.696   .59607   32.183   25.888     .057    1437.9
   25.0   -1.692   .59641   32.205   25.906     .059    1437.9
   27.5   -1.687   .59722   32.246   25.940     .064    1438.0
   30.0   -1.691   .59830   32.313   25.994     .069    1438.1
   32.5   -1.683   .59907   32.348   26.022     .074    1438.3
   35.0   -1.664   .59990   32.375   26.044     .079    1438.4
   37.5   -1.663   .60005   32.381   26.049     .084    1438.5
   40.0   -1.660   .60021   32.386   26.053     .089    1438.6
   42.5   -1.649   .60088   32.412   26.074     .094    1438.7
   45.0   -1.624   .60229   32.467   26.118     .098    1438.9
   47.5   -1.619   .60268   32.483   26.131     .103    1439.0
   50.0   -1.612   .60330   32.511   26.153     .108    1439.1
   55.0   -1.603   .60394   32.536   26.173     .117    1439.3
   60.0   -1.568   .60642   32.641   26.258     .126    1439.7
   65.0   -1.537   .60833   32.718   26.319     .134    1440.0
   70.0   -1.512   .61095   32.842   26.420     .143    1440.4
   75.0   -1.510   .61185   32.890   26.458     .151    1440.5
   76.0   -1.509   .61200   32.896   26.464     .152    1440.6
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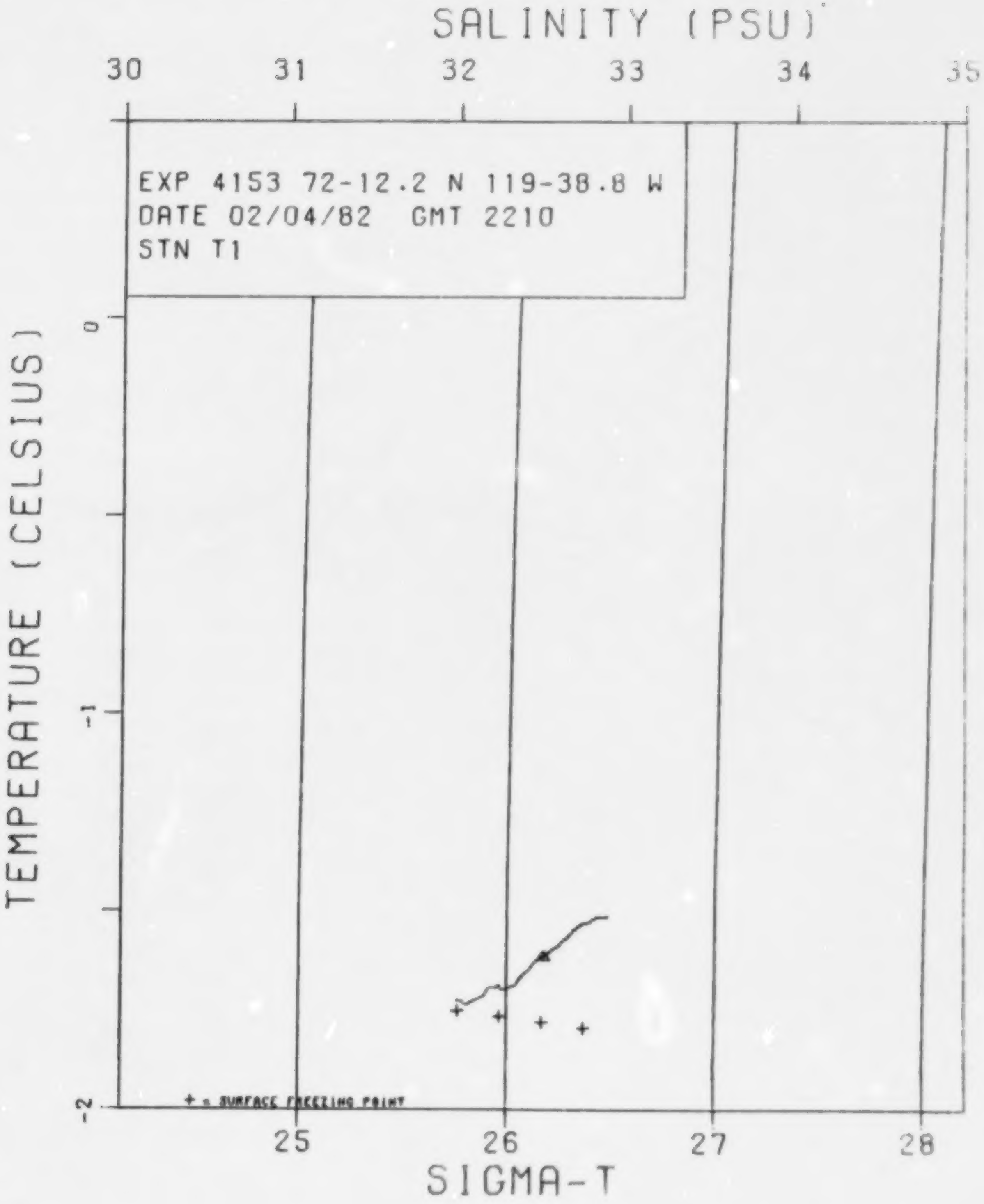
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EXP 4153 72-12.2 N 119-38.8 W
DATE 02/04/82 GMT 2210
STN T1
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+ = SURFACE FREEZING POINT
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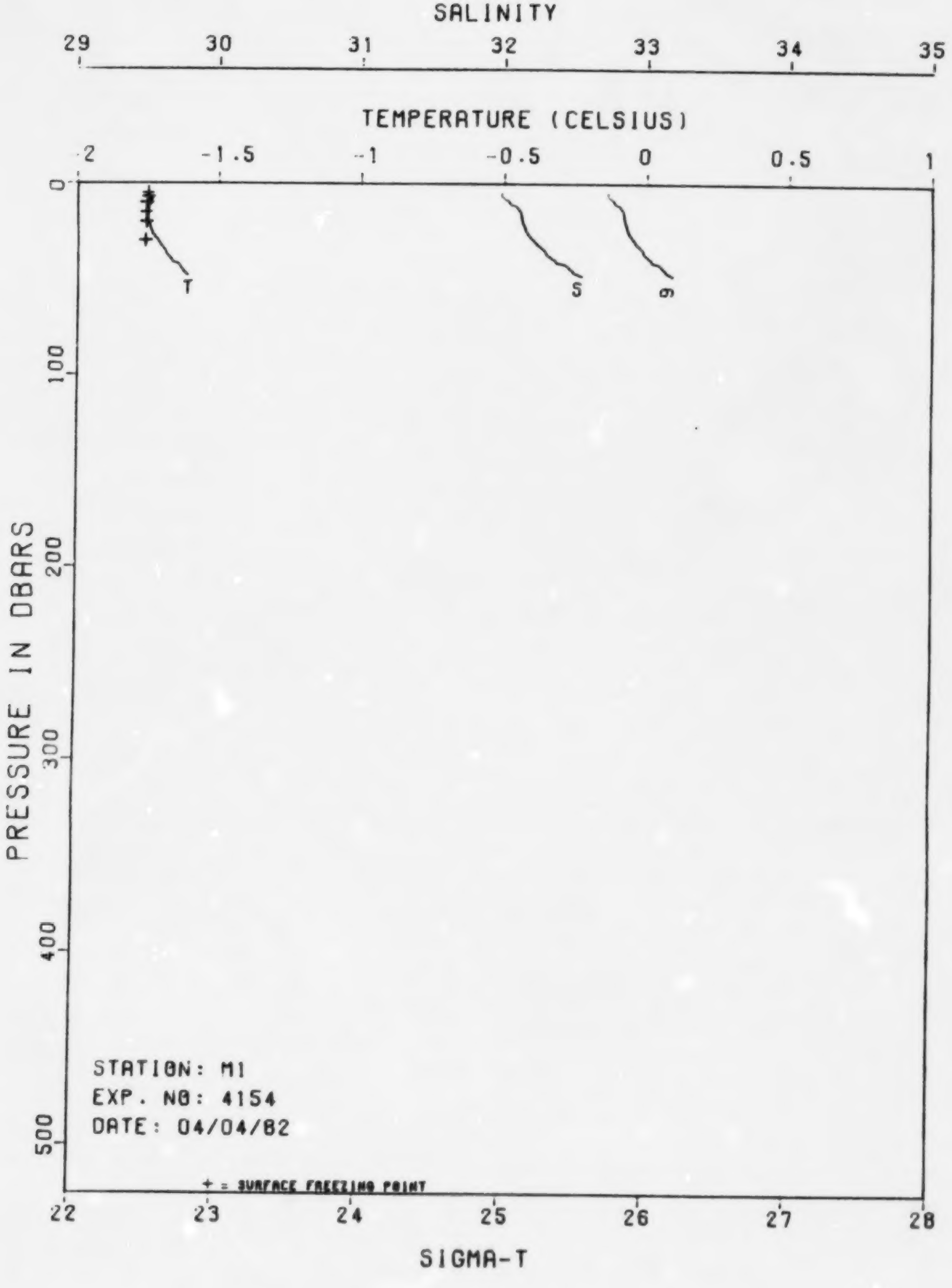
SIGMA-T


SALINITY
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34
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TEMPERATURE (CELSIUS)
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-1
-0.5
0
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PRESSURE IN DBARS
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STATION: M1
EXP. NO: 4154
DATE: 04/04/82
+ = SURFACE FREEZING POINT
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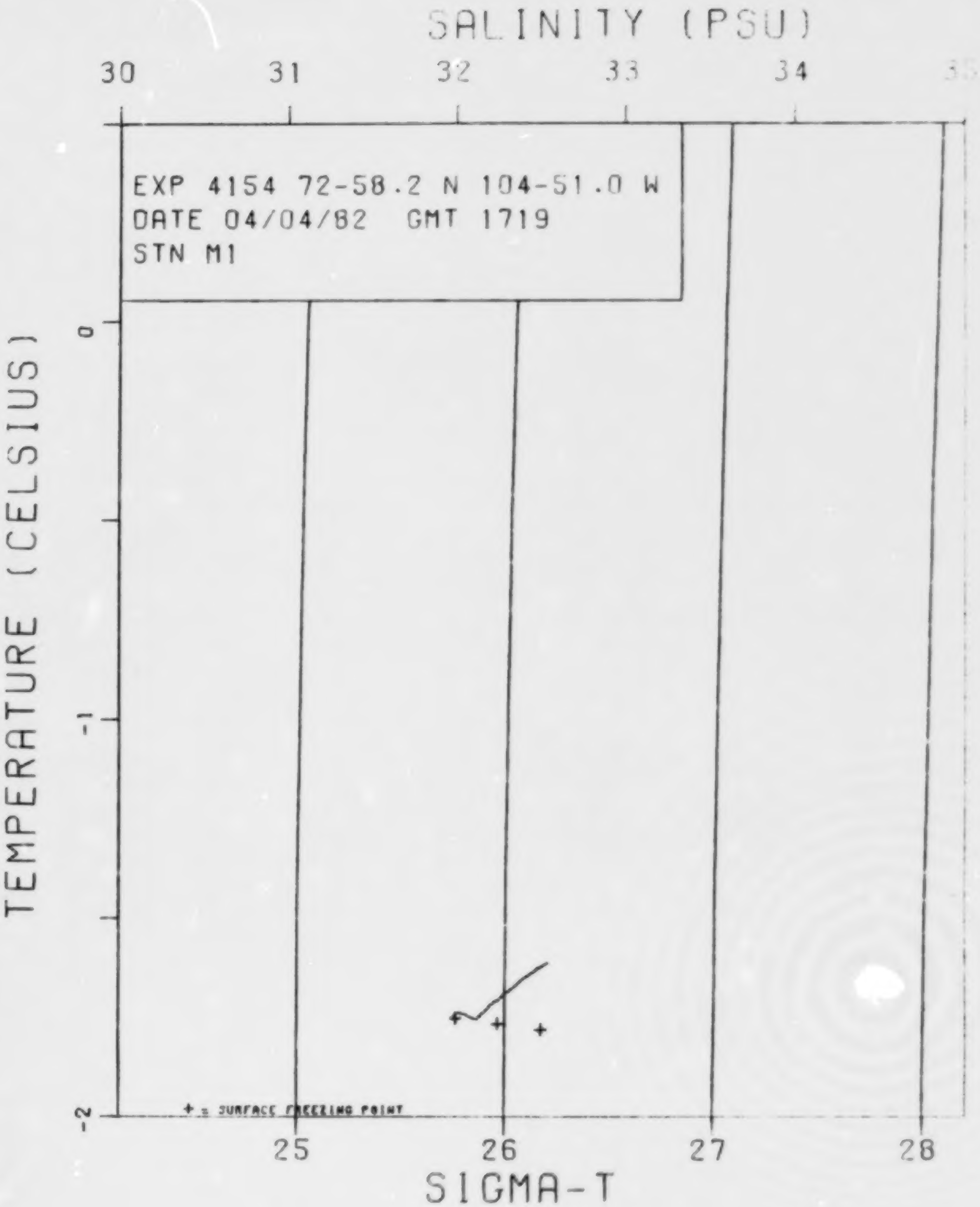
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE M1 EXPERIMENT 4154

LAT.N. 72-58-11 LON.W. 104-51- 0 DATE 4/ 4/82 G.M.T. 1719

ICE THICKNESS 1.6 M WATER DEPTH 53 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.9	-1.750	.59133	31.979	25.723	.011	1437.0
5.0	-1.750	.59130	31.976	25.722	.011	1437.0
6.0	-1.750	.59129	31.975	25.721	.014	1437.0
7.0	-1.745	.59150	31.962	25.726	.016	1437.0
8.0	-1.736	.59198	32.002	25.742	.018	1437.1
9.0	-1.736	.59247	32.028	25.764	.020	1437.2
10.0	-1.741	.59254	32.038	25.772	.022	1437.2
11.0	-1.741	.59288	32.057	25.787	.025	1437.2
12.0	-1.749	.59322	32.085	25.810	.027	1437.3
13.0	-1.752	.59336	32.097	25.820	.029	1437.3
14.0	-1.752	.59353	32.106	25.827	.031	1437.3
15.0	-1.753	.59364	32.112	25.832	.033	1437.3
16.0	-1.753	.59368	32.115	25.834	.036	1437.3
17.0	-1.753	.59372	32.116	25.835	.038	1437.4
18.0	-1.753	.59374	32.117	25.836	.040	1437.4
19.0	-1.753	.59380	32.120	25.838	.042	1437.4
20.0	-1.752	.59386	32.122	25.840	.044	1437.4
21.0	-1.750	.59398	32.126	25.844	.046	1437.5
22.0	-1.746	.59425	32.138	25.853	.048	1437.5
23.0	-1.745	.59434	32.140	25.855	.051	1437.5
24.0	-1.743	.59447	32.145	25.859	.053	1437.6
25.0	-1.741	.59458	32.150	25.863	.055	1437.6
27.5	-1.729	.59527	32.176	25.884	.060	1437.7
30.0	-1.716	.59601	32.205	25.906	.065	1437.9
32.5	-1.706	.59682	32.240	25.935	.071	1438.0
35.0	-1.693	.59774	32.279	25.966	.076	1438.2
37.5	-1.686	.59820	32.296	25.980	.081	1438.3
40.0	-1.666	.59951	32.354	26.027	.086	1438.5
42.5	-1.643	.60129	32.430	26.088	.091	1438.7
45.0	-1.631	.60215	32.466	26.117	.095	1438.9
47.5	-1.619	.60322	32.515	26.156	.100	1439.1
48.4	-1.610	.60394	32.548	26.183	.102	1439.2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EXP 4154 72-58.2 N 104-51.0 W
DATE 04/04/82 GMT 1719
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TEMPERATURE (CELSIUS)
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+ = SURFACE FREEZING POINT
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SIGMA-T
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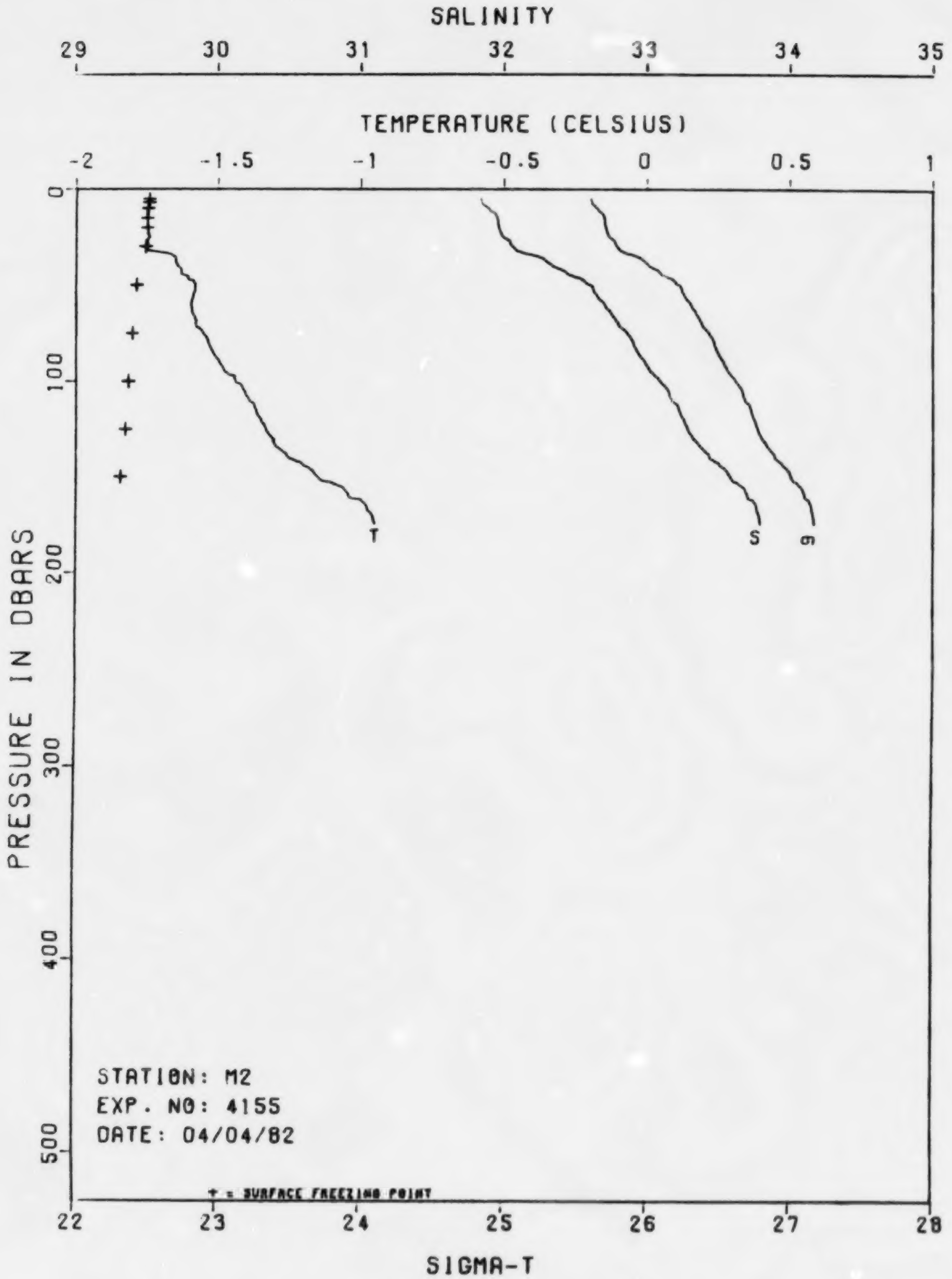
SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: M2
EXP. NO: 4155
DATE: 04/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE M2 EXPERIMENT 4155

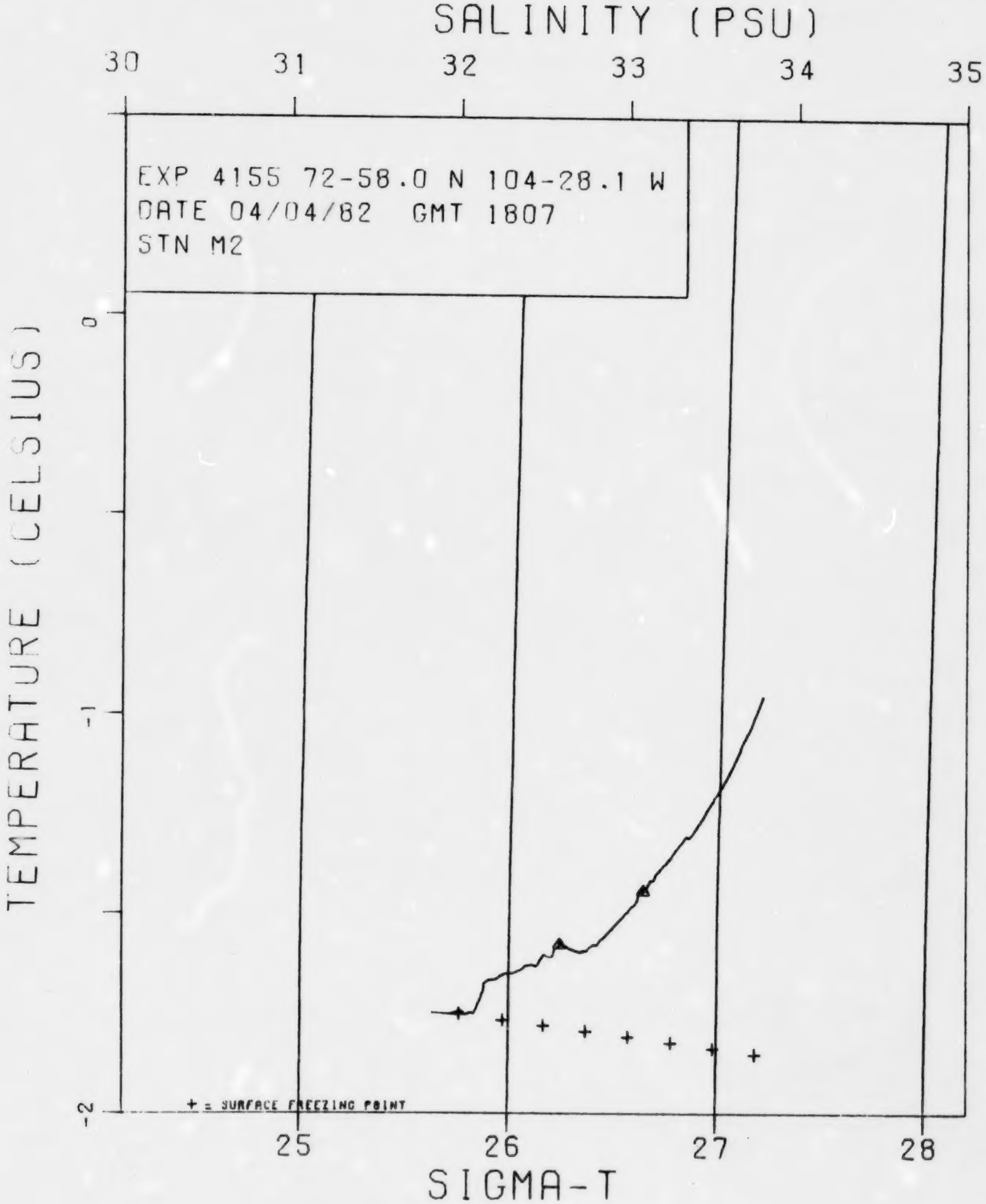
LAT.N. 72-58- 0 LON.W. 104-28- 5 DATE 4/ 4/82 G.M.T. 1807

ICE THICKNESS 2.0 M WATER DEPTH 177 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.747	.58902	31.838	25.609	.012	1436.8
6.0	-1.749	.58912	31.845	25.615	.014	1436.8
7.0	-1.749	.58918	31.848	25.617	.017	1436.8
8.0	-1.749	.58918	31.847	25.617	.019	1436.9
9.0	-1.749	.58963	31.874	25.638	.021	1436.9
10.0	-1.750	.58998	31.895	25.656	.024	1436.9
11.0	-1.751	.59012	31.904	25.663	.026	1437.0
12.0	-1.751	.59036	31.918	25.674	.028	1437.0
13.0	-1.751	.59076	31.941	25.693	.031	1437.1
14.0	-1.752	.59091	31.949	25.700	.033	1437.1
15.0	-1.751	.59100	31.954	25.703	.035	1437.1
16.0	-1.750	.59109	31.958	25.706	.037	1437.1
17.0	-1.748	.59115	31.959	25.707	.040	1437.2
18.0	-1.749	.59118	31.961	25.709	.042	1437.2
19.0	-1.746	.59123	31.962	25.710	.044	1437.2
20.0	-1.746	.59134	31.968	25.714	.047	1437.2
21.0	-1.747	.59144	31.972	25.718	.049	1437.3
22.0	-1.746	.59153	31.976	25.721	.051	1437.3
23.0	-1.747	.59166	31.983	25.727	.053	1437.3
24.0	-1.745	.59172	31.985	25.729	.056	1437.3
25.0	-1.741	.59205	31.999	25.740	.058	1437.4
27.5	-1.751	.59269	32.046	25.778	.063	1437.4
30.0	-1.746	.59311	32.064	25.793	.069	1437.5
32.5	-1.720	.59442	32.112	25.832	.074	1437.8
35.0	-1.654	.59777	32.239	25.933	.080	1438.3
37.5	-1.647	.59898	32.301	25.983	.085	1438.5
40.0	-1.643	.59980	32.343	26.018	.090	1438.6
42.5	-1.626	.60152	32.425	26.083	.094	1438.8
45.0	-1.613	.60265	32.477	26.126	.099	1439.0
47.5	-1.594	.60438	32.556	26.189	.104	1439.2
50.0	-1.577	.60558	32.607	26.230	.108	1439.4
55.0	-1.588	.60618	32.652	26.267	.117	1439.5
60.0	-1.596	.60702	32.707	26.312	.126	1439.6
65.0	-1.590	.60796	32.754	26.350	.134	1439.8
70.0	-1.579	.60902	32.801	26.388	.142	1440.0
75.0	-1.552	.61065	32.865	26.439	.150	1440.3
80.0	-1.533	.61177	32.908	26.473	.158	1440.5
85.0	-1.517	.61272	32.942	26.501	.166	1440.8
90.0	-1.495	.61397	32.989	26.538	.173	1441.0
95.0	-1.477	.61502	33.028	26.569	.181	1441.2
100.0	-1.439	.61694	33.096	26.624	.188	1441.6
105.0	-1.409	.61855	33.154	26.670	.195	1441.9
110.0	-1.390	.61936	33.178	26.689	.201	1442.1
115.0	-1.368	.62068	33.228	26.729	.208	1442.4

SITE M2   EXPERIMENT 4155

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.348	.62167	33.261	26.755	.214	1442.6
125.0	-1.331	.62252	33.290	26.776	.221	1442.8
130.0	-1.309	.62362	33.327	26.807	.227	1443.0
135.0	-1.288	.62516	33.392	26.859	.233	1443.3
140.0	-1.254	.62674	33.443	26.900	.238	1443.6
145.0	-1.185	.62978	33.541	26.977	.244	1444.1
150.0	-1.150	.63126	33.586	27.013	.249	1444.5
155.0	-1.072	.63420	33.667	27.076	.254	1445.0
160.0	-1.041	.63546	33.705	27.105	.259	1445.3
165.0	-.980	.63775	33.765	27.152	.264	1445.7
170.0	-.960	.63852	33.785	27.167	.266	1446.0
174.9	-.949	.63891	33.793	27.173	.272	1446.1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35
EXP 4155 72-58.0 N 104-28.1 W
DATE 04/04/82 GMT 1807
STN M2
TEMPERATURE (CELSIUS)
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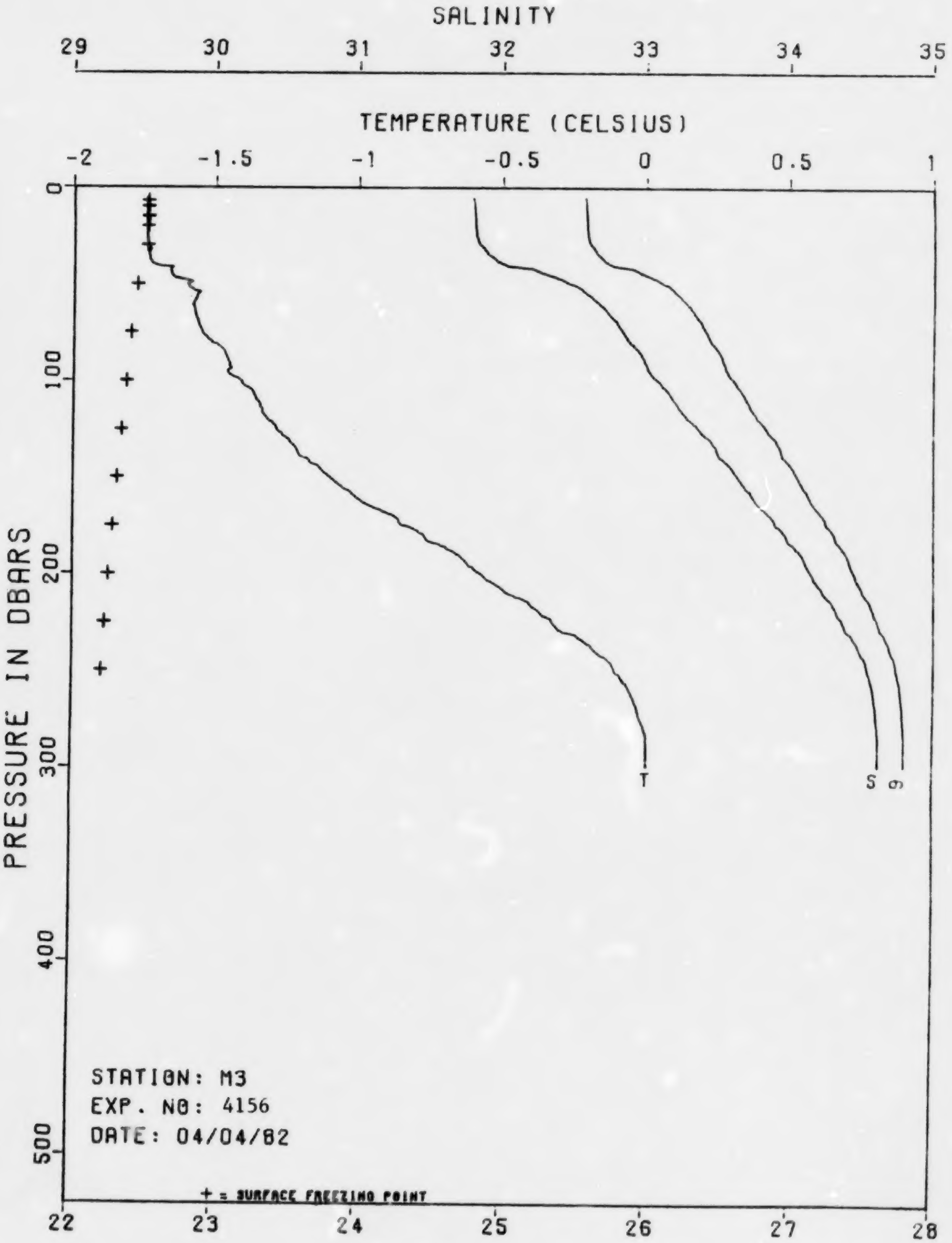
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
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STATION: M3
EXP. NO: 4156
DATE: 04/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE C15-82-022 ARCTIC ISLANDS-82 SITE M3 EXPERIMENT 4156

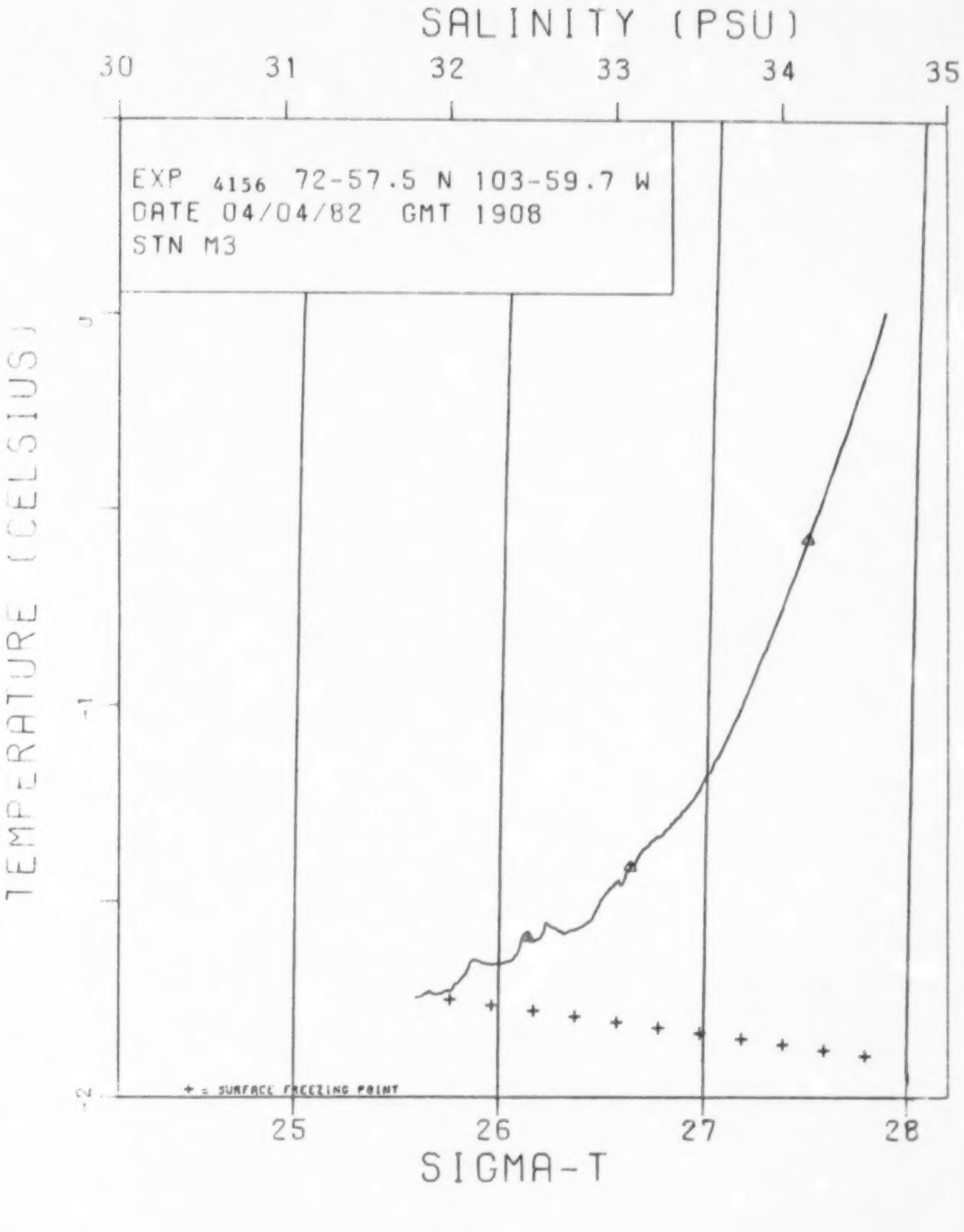
LAT.N. 72-57-30 LON.W. 103-59-41 DATE 4/ 4/82 G.M.T. 1908

ICE THICKNESS 2.0 M WATER DEPTH 301 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.5	-1.746	.58823	31.789	25.570	.013	1436.7
6.0	-1.746	.58831	31.794	25.574	.014	1436.8
7.0	-1.746	.58837	31.797	25.576	.017	1436.8
8.0	-1.746	.58839	31.798	25.577	.019	1436.8
9.0	-1.746	.58840	31.797	25.576	.022	1436.8
10.0	-1.746	.58841	31.797	25.576	.024	1436.8
11.0	-1.746	.58843	31.798	25.577	.026	1436.8
12.0	-1.746	.58845	31.799	25.577	.029	1436.9
13.0	-1.746	.58847	31.799	25.577	.031	1436.9
14.0	-1.745	.58850	31.799	25.578	.034	1436.9
15.0	-1.746	.58850	31.800	25.578	.036	1436.9
16.0	-1.746	.58854	31.802	25.580	.038	1436.9
17.0	-1.746	.58855	31.802	25.580	.041	1436.9
18.0	-1.746	.58859	31.803	25.581	.043	1437.0
19.0	-1.745	.58860	31.802	25.580	.046	1437.0
20.0	-1.746	.58861	31.803	25.581	.048	1437.0
21.0	-1.746	.58862	31.803	25.581	.050	1437.0
22.0	-1.745	.58870	31.806	25.583	.053	1437.0
23.0	-1.745	.58876	31.809	25.585	.055	1437.1
24.0	-1.745	.58879	31.810	25.586	.058	1437.1
25.0	-1.745	.58884	31.812	25.588	.060	1437.1
27.5	-1.743	.58902	31.821	25.595	.066	1437.2
30.0	-1.739	.58944	31.839	25.610	.072	1437.2
32.5	-1.729	.59020	31.872	25.636	.078	1437.4
35.0	-1.739	.59053	31.901	25.660	.084	1437.4
37.5	-1.736	.59145	31.950	25.700	.089	1437.5
40.0	-1.719	.59288	32.016	25.753	.095	1437.8
42.5	-1.662	.59744	32.223	25.920	.100	1438.4
45.0	-1.656	.59895	32.306	25.988	.105	1438.5
47.5	-1.625	.60132	32.410	26.071	.110	1438.9
50.0	-1.603	.60286	32.475	26.123	.115	1439.1
55.0	-1.561	.60551	32.582	26.210	.124	1439.6
60.0	-1.579	.60666	32.668	26.280	.133	1439.7
65.0	-1.574	.60793	32.734	26.333	.142	1439.9
70.0	-1.562	.60923	32.795	26.383	.150	1440.1
75.0	-1.549	.61030	32.841	26.419	.158	1440.3
80.0	-1.514	.61175	32.885	26.454	.166	1440.6
85.0	-1.470	.61376	32.952	26.508	.173	1441.0
90.0	-1.455	.61468	32.986	26.535	.181	1441.2
95.0	-1.460	.61517	33.018	26.561	.188	1441.3
100.0	-1.409	.61728	33.083	26.612	.195	1441.7
105.0	-1.371	.61908	33.144	26.661	.202	1442.1
110.0	-1.355	.62018	33.188	26.696	.209	1442.3
115.0	-1.334	.62151	33.240	26.737	.216	1442.5

SITE M3 EXPERIMENT 4156

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.316	.62284	33.295	26.782	.222	1442.8
125.0	-1.284	.62471	33.366	26.838	.226	1443.1
130.0	-1.244	.62680	33.442	26.896	.234	1443.5
135.0	-1.216	.62816	33.489	26.936	.239	1443.8
140.0	-1.187	.62943	33.526	26.965	.245	1444.0
145.0	-1.135	.63168	33.596	27.020	.250	1444.5
150.0	-1.098	.63325	33.644	27.056	.255	1444.8
155.0	-1.056	.63488	33.690	27.093	.260	1445.1
160.0	-1.009	.63678	33.744	27.136	.265	1445.5
165.0	-.955	.63875	33.796	27.176	.269	1445.9
170.0	-.874	.64170	33.873	27.235	.273	1446.5
175.0	-.843	.64291	33.906	27.261	.277	1446.7
180.0	-.766	.64557	33.974	27.313	.281	1447.3
185.0	-.712	.64763	34.027	27.353	.285	1447.7
190.0	-.651	.64986	34.064	27.397	.288	1448.1
195.0	-.618	.65110	34.115	27.421	.292	1448.4
200.0	-.572	.65271	34.154	27.450	.295	1448.8
210.0	-.480	.65602	34.235	27.512	.301	1449.5
220.0	-.367	.65996	34.328	27.582	.306	1450.3
230.0	-.284	.66297	34.401	27.636	.310	1450.9
240.0	-.173	.66676	34.487	27.701	.314	1451.7
250.0	-.109	.66911	34.542	27.742	.318	1452.3
260.0	-.054	.67099	34.561	27.771	.321	1452.7
270.0	-.026	.67202	34.602	27.787	.324	1453.1
280.0	-.001	.67286	34.616	27.796	.327	1453.3
290.0	.007	.67321	34.620	27.799	.330	1453.6
299.1	.007	.67331	34.621	27.800	.333	1453.7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EXP 4156 72-57.5 N 103-59.7 W
DATE 04/04/82 GMT 1908
STN M3
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
25
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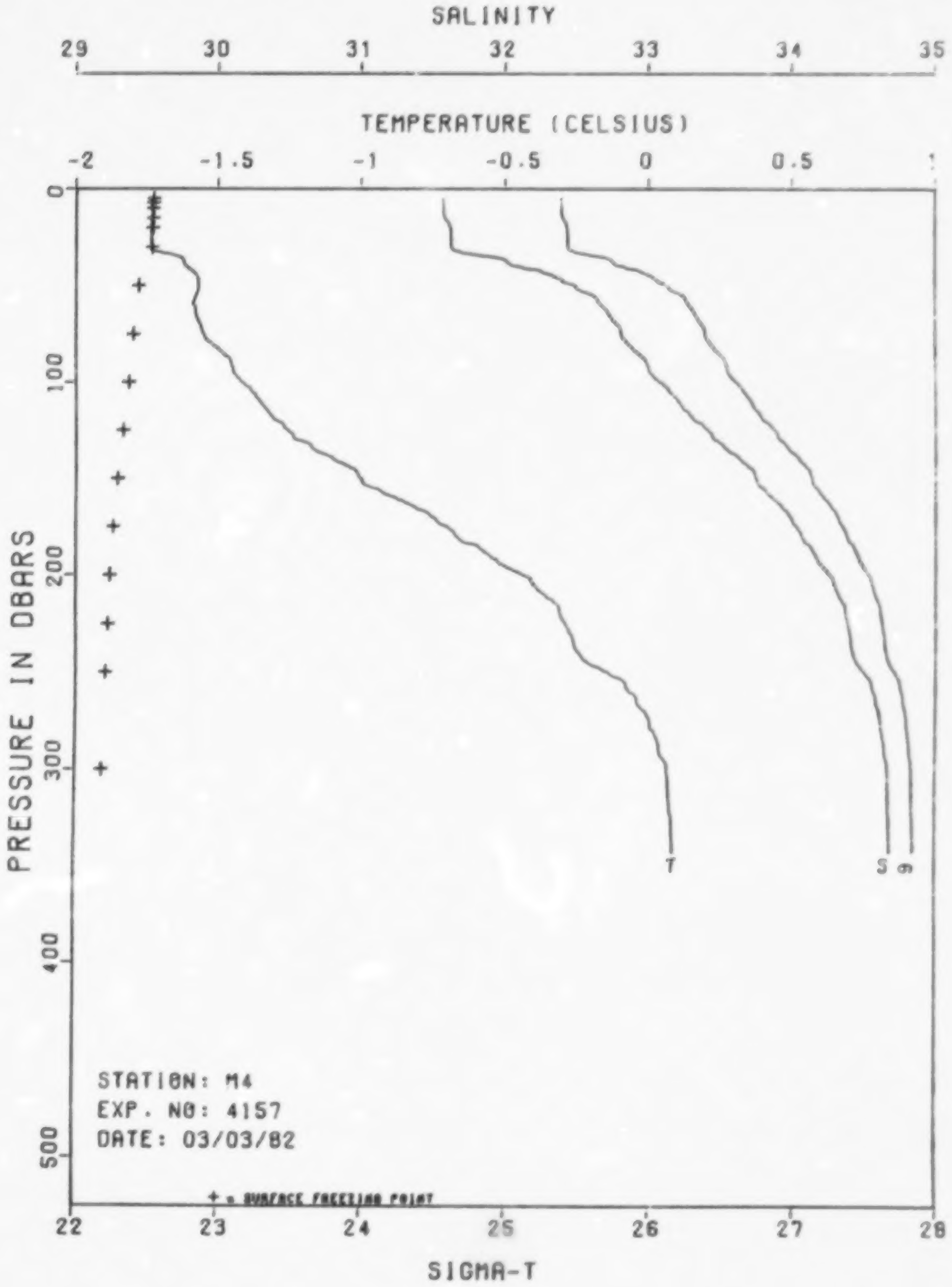
SIGMA-T


SALINITY
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31
32
33
34
35
TEMPERATURE (CELSIUS)
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-1.5
-1
-0.5
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0.5
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PRESSURE IN DBARS
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100
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STATION: M4
EXP. NO: 4157
DATE: 03/03/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE M4 EXPERIMENT 4157

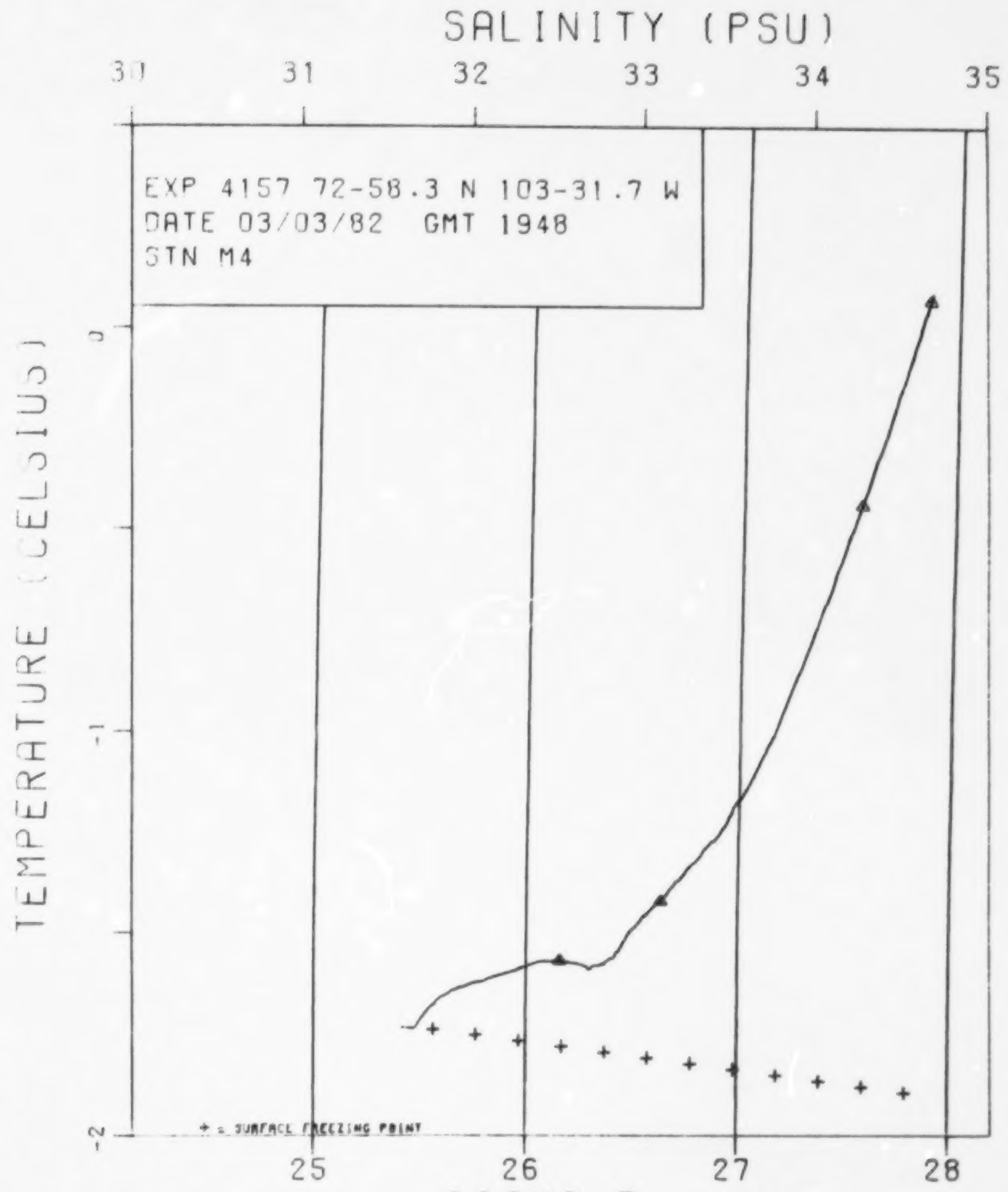
LAT.N. 72-58-18 LON.W. 103-31-42 DATE 3/ 3/82 G.M.T. 1948

ICE THICKNESS 1.8 M WATER DEPTH 345 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.8	-1.732	.58474	31.568	25.390	.013	1436.5
5.0	-1.734	.58476	31.572	25.392	.013	1436.5
6.0	-1.733	.58482	31.573	25.394	.016	1436.5
7.0	-1.733	.58483	31.573	25.394	.018	1436.5
8.0	-1.733	.58484	31.573	25.394	.021	1436.5
9.0	-1.733	.58484	31.572	25.393	.023	1436.6
10.0	-1.733	.58485	31.572	25.393	.026	1436.6
11.0	-1.733	.58486	31.573	25.393	.028	1436.6
12.0	-1.733	.58489	31.573	25.394	.031	1436.6
13.0	-1.733	.58492	31.575	25.395	.034	1436.6
14.0	-1.732	.58496	31.576	25.396	.036	1436.6
15.0	-1.732	.58507	31.582	25.401	.039	1436.7
16.0	-1.733	.58516	31.587	25.405	.041	1436.7
17.0	-1.735	.58542	31.604	25.419	.044	1436.7
18.0	-1.736	.58557	31.613	25.426	.046	1436.8
19.0	-1.735	.58564	31.616	25.429	.049	1436.8
20.0	-1.736	.58575	31.623	25.434	.051	1436.8
21.0	-1.736	.58579	31.625	25.436	.054	1436.8
22.0	-1.735	.58582	31.625	25.436	.056	1436.8
23.0	-1.736	.58582	31.625	25.436	.059	1436.8
24.0	-1.735	.58586	31.626	25.436	.062	1436.9
25.0	-1.735	.58589	31.627	25.437	.064	1436.9
27.5	-1.735	.58593	31.628	25.438	.070	1436.9
30.0	-1.735	.58596	31.629	25.439	.077	1437.0
32.5	-1.706	.58742	31.683	25.482	.083	1437.2
35.0	-1.634	.59248	31.903	25.660	.089	1437.9
37.5	-1.620	.59472	32.019	25.754	.095	1438.2
40.0	-1.611	.59577	32.071	25.796	.100	1438.3
42.5	-1.587	.59936	32.257	25.946	.106	1438.8
45.0	-1.573	.60103	32.338	26.012	.111	1439.0
47.5	-1.570	.60226	32.405	26.066	.115	1439.1
50.0	-1.569	.60372	32.488	26.134	.120	1439.3
55.0	-1.576	.60577	32.617	26.239	.129	1439.5
60.0	-1.586	.60656	32.669	26.281	.138	1439.6
65.0	-1.576	.60774	32.728	26.328	.147	1439.8
70.0	-1.561	.60905	32.784	26.373	.155	1440.1
75.0	-1.551	.60979	32.813	26.397	.163	1440.2
80.0	-1.524	.61110	32.858	26.432	.171	1440.5
85.0	-1.494	.61312	32.929	26.489	.179	1440.9
90.0	-1.454	.61477	32.991	26.539	.186	1441.2
95.0	-1.444	.61539	33.013	26.557	.194	1441.4
100.0	-1.416	.61712	33.083	26.613	.201	1441.7
105.0	-1.381	.61898	33.149	26.665	.208	1442.0
110.0	-1.353	.62064	33.213	26.716	.214	1442.3

SITE M4 EXPERIMENT 4157

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.325	.62215	33.267	26.759	.221	1442.6
120.0	-1.295	.62373	33.324	26.805	.227	1442.9
125.0	-1.255	.62620	33.422	26.883	.233	1443.3
130.0	-1.223	.62764	33.467	26.916	.239	1443.6
135.0	-1.164	.63022	33.550	26.984	.244	1444.1
140.0	-1.095	.63316	33.641	27.055	.249	1444.6
145.0	-1.027	.63584	33.719	27.116	.254	1445.1
150.0	-1.000	.63698	33.752	27.142	.258	1445.4
155.0	-.953	.63866	33.795	27.175	.263	1445.8
160.0	-.881	.64127	33.863	27.227	.267	1446.3
165.0	-.812	.64386	33.933	27.281	.271	1446.9
170.0	-.754	.64598	33.987	27.323	.275	1447.2
175.0	-.700	.64783	34.031	27.357	.279	1447.6
180.0	-.669	.64910	34.067	27.384	.282	1447.9
185.0	-.591	.65177	34.130	27.432	.285	1448.4
190.0	-.551	.65325	34.167	27.460	.288	1448.7
195.0	-.502	.65501	34.211	27.493	.291	1449.1
200.0	-.433	.65734	34.265	27.534	.294	1449.6
210.0	-.362	.65990	34.325	27.580	.299	1450.1
220.0	-.308	.66195	34.376	27.616	.304	1450.6
230.0	-.274	.66318	34.402	27.637	.308	1451.0
240.0	-.242	.66434	34.426	27.655	.313	1451.3
250.0	-.141	.66787	34.508	27.717	.317	1452.1
260.0	-.064	.67054	34.567	27.760	.320	1452.7
270.0	-.007	.67250	34.609	27.791	.323	1453.1
280.0	.020	.67348	34.628	27.805	.326	1453.5
290.0	.040	.67433	34.648	27.820	.329	1453.7
300.0	.068	.67537	34.668	27.835	.332	1454.1
310.0	.072	.67560	34.670	27.836	.334	1454.3
320.0	.075	.67580	34.673	27.839	.337	1454.4
330.0	.083	.67612	34.676	27.840	.339	1454.6
340.0	.087	.67637	34.680	27.844	.342	1454.8
343.1	.087	.67642	34.680	27.843	.343	1454.9


SALINITY (PSU)
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EXP 4157 72-58.3 N 103-31.7 W
DATE 03/03/82 GMT 1948
STN M4
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
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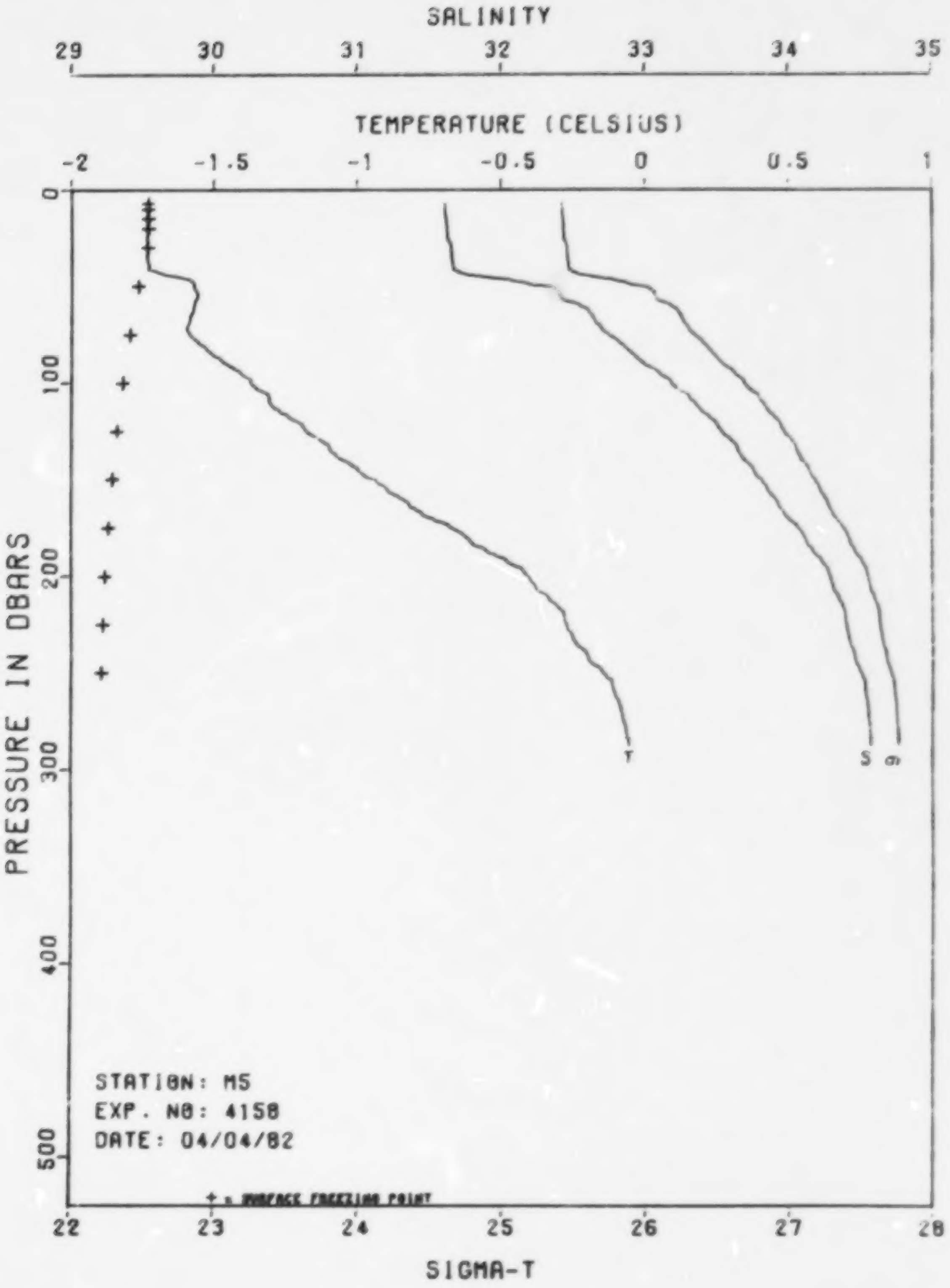
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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-0.5
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PRESSURE IN DBARS
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STATION: M5
EXP. NO: 4158
DATE: 04/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE M5   EXPERIMENT 4158

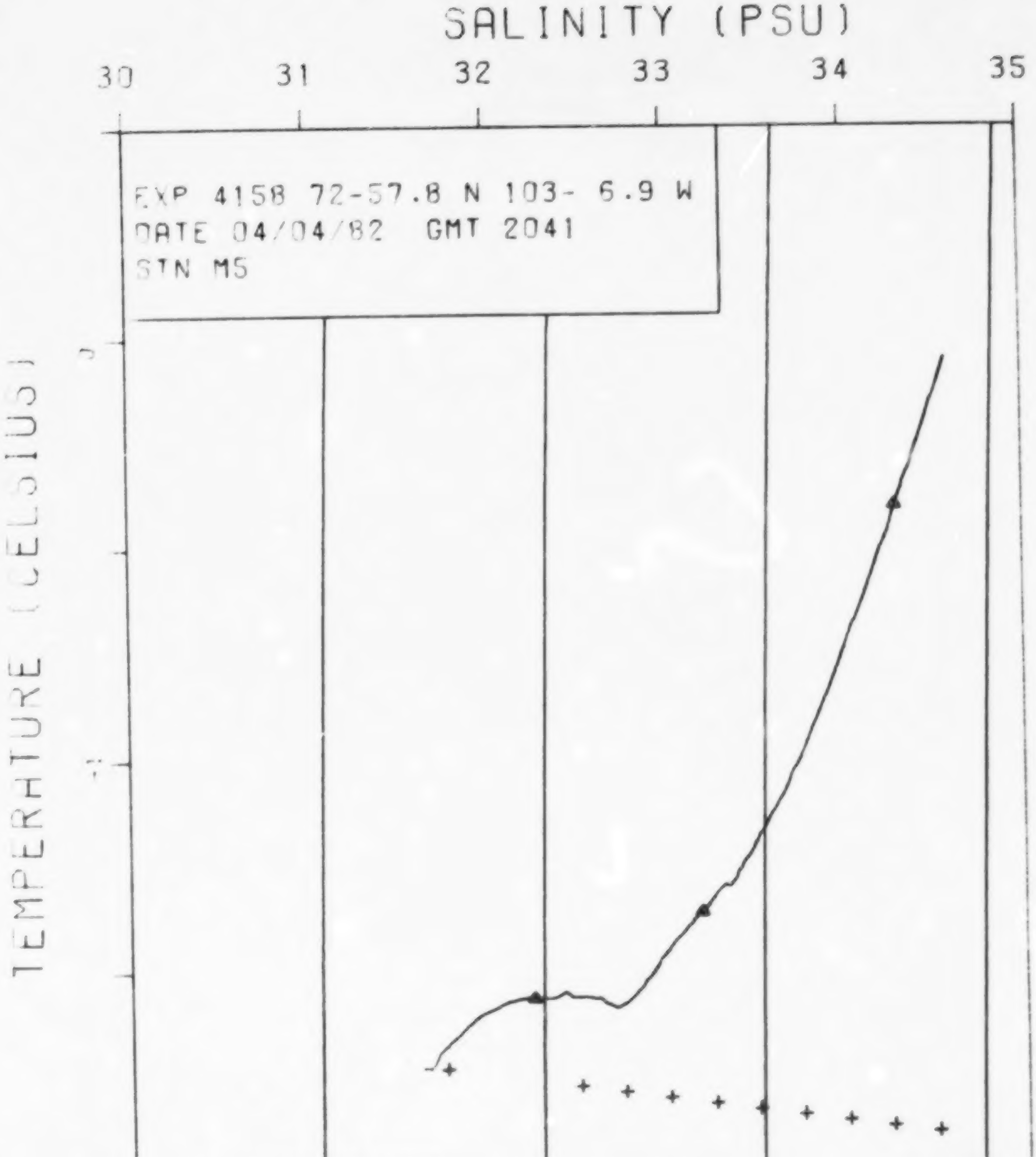
LAT.N. 72-57-48   LON.W. 103- 6-53   DATE 4/ 4/82   G.M.T. 2041

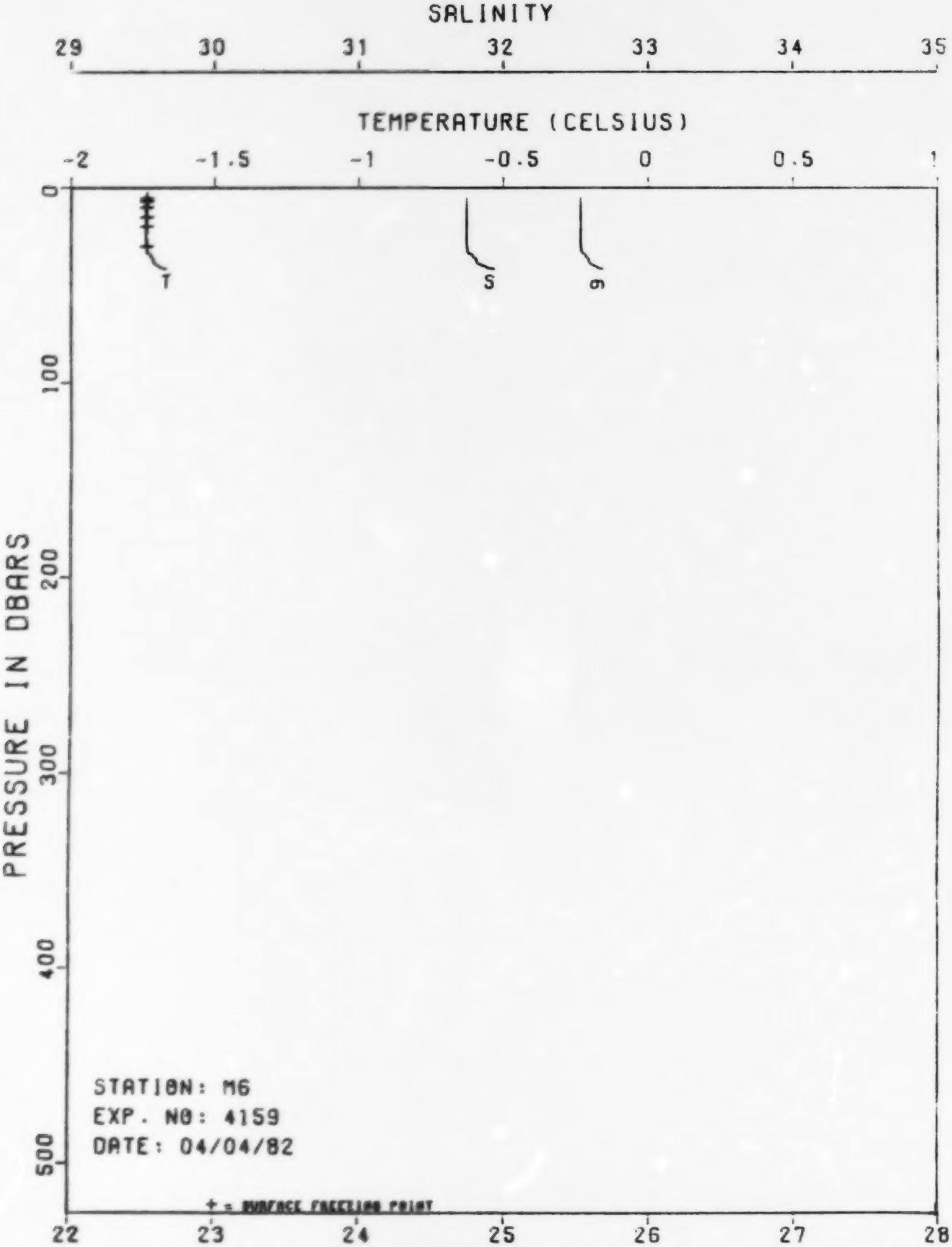
ICE THICKNESS 1.9 M   WATER DEPTH 289 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
6.7	-1.734	.58544	31.611	25.424	.017	1436.6
7.0	-1.734	.58543	31.610	25.424	.018	1436.6
8.0	-1.734	.58544	31.610	25.424	.020	1436.6
9.0	-1.734	.58546	31.610	25.423	.023	1436.6
10.0	-1.733	.58551	31.611	25.425	.025	1436.6
11.0	-1.734	.58554	31.613	25.426	.028	1436.6
12.0	-1.734	.58557	31.615	25.428	.031	1436.7
13.0	-1.733	.58557	31.614	25.427	.033	1436.7
14.0	-1.735	.58560	31.617	25.429	.036	1436.7
15.0	-1.735	.58567	31.620	25.432	.038	1436.7
16.0	-1.735	.58570	31.621	25.433	.041	1436.7
17.0	-1.735	.58572	31.622	25.434	.043	1436.7
18.0	-1.734	.58576	31.623	25.434	.046	1436.8
19.0	-1.734	.58579	31.624	25.435	.048	1436.8
20.0	-1.735	.58579	31.624	25.435	.051	1436.8
21.0	-1.735	.58581	31.625	25.436	.053	1436.8
22.0	-1.736	.58583	31.626	25.437	.056	1436.8
23.0	-1.735	.58584	31.625	25.436	.058	1436.9
24.0	-1.735	.58586	31.626	25.437	.061	1436.9
25.0	-1.735	.58589	31.627	25.438	.063	1436.9
27.5	-1.736	.58627	31.649	25.455	.070	1437.0
30.0	-1.735	.58640	31.655	25.460	.076	1437.0
32.5	-1.735	.58646	31.656	25.461	.082	1437.1
35.0	-1.736	.58654	31.660	25.465	.089	1437.1
37.5	-1.732	.58666	31.662	25.466	.095	1437.2
40.0	-1.730	.58684	31.669	25.471	.101	1437.2
42.5	-1.696	.58805	31.705	25.500	.107	1437.5
45.0	-1.633	.59197	31.866	25.629	.113	1438.0
47.5	-1.577	.59695	32.099	25.817	.119	1438.7
50.0	-1.571	.60065	32.309	25.988	.124	1439.0
55.0	-1.556	.60272	32.412	26.071	.134	1439.3
60.0	-1.569	.60481	32.547	26.182	.143	1439.5
65.0	-1.581	.60611	32.634	26.252	.152	1439.7
70.0	-1.591	.60681	32.683	26.293	.161	1439.8
75.0	-1.582	.60613	32.749	26.346	.169	1440.0
80.0	-1.550	.61024	32.835	26.415	.178	1440.4
85.0	-1.510	.61237	32.914	26.478	.185	1440.7
90.0	-1.456	.61475	32.994	26.542	.193	1441.2
95.0	-1.404	.61766	33.103	26.628	.200	1441.7
100.0	-1.369	.61982	33.188	26.696	.207	1442.0
105.0	-1.322	.62216	33.271	26.762	.213	1442.5
110.0	-1.304	.62388	33.349	26.825	.220	1442.7
115.0	-1.266	.62553	33.403	26.868	.225	1443.1
120.0	-1.205	.62829	33.491	26.937	.231	1443.6

SITE M5 EXPERIMENT 4158

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
125.0	-1.172	.62974	33.537	26.973	.237	1443.9
130.0	-1.120	.63200	33.608	27.029	.242	1444.3
135.0	-1.090	.63334	33.649	27.062	.247	1444.6
140.0	-1.049	.63489	33.691	27.094	.252	1444.9
145.0	-.992	.63715	33.757	27.145	.256	1445.3
150.0	-.934	.63927	33.812	27.188	.261	1445.8
155.0	-.896	.64078	33.854	27.221	.265	1446.1
160.0	-.845	.64270	33.905	27.260	.269	1446.5
165.0	-.798	.64436	33.946	27.291	.273	1446.8
170.0	-.741	.64645	34.000	27.333	.277	1447.3
175.0	-.672	.64895	34.065	27.382	.280	1447.8
180.0	-.620	.65084	34.112	27.418	.283	1448.2
185.0	-.570	.65259	34.154	27.450	.287	1448.5
190.0	-.504	.65480	34.205	27.488	.290	1449.0
195.0	-.449	.65689	34.259	27.530	.292	1449.4
200.0	-.407	.65829	34.289	27.552	.295	1449.7
210.0	-.341	.66060	34.341	27.591	.300	1450.3
220.0	-.281	.66280	34.395	27.632	.305	1450.8
230.0	-.255	.66380	34.416	27.648	.309	1451.1
240.0	-.201	.66568	34.457	27.678	.313	1451.6
250.0	-.144	.66769	34.501	27.711	.317	1452.0
260.0	-.105	.66919	34.537	27.738	.321	1452.4
270.0	-.081	.67009	34.555	27.751	.324	1452.7
280.0	-.064	.67077	34.568	27.761	.327	1453.0
287.9	-.054	.67116	34.574	27.765	.330	1453.2


SALINITY (PSU)
30
31
32
33
34
35
EXP 4158 72-57.8 N 103- 6.9 W
DATE 04/04/82 GMT 2041
STN M5
TEMPERATURE (CELSIUS)
0
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
300
400
500
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STATION: M6
EXP. NO: 4159
DATE: 04/04/82
+ = SURFACE FREEZING POINT
22
23
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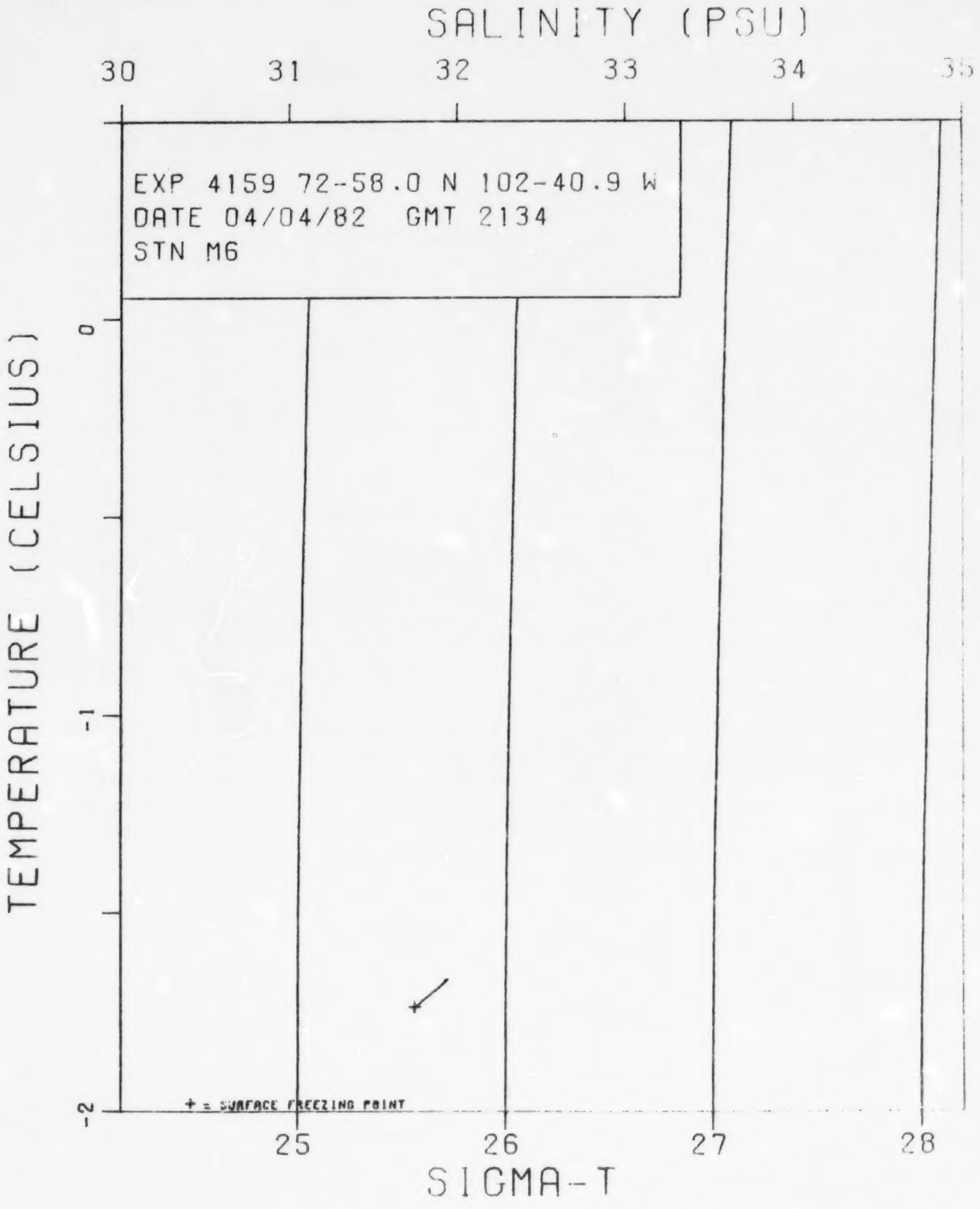
25
26
27
28
SIGMA-T

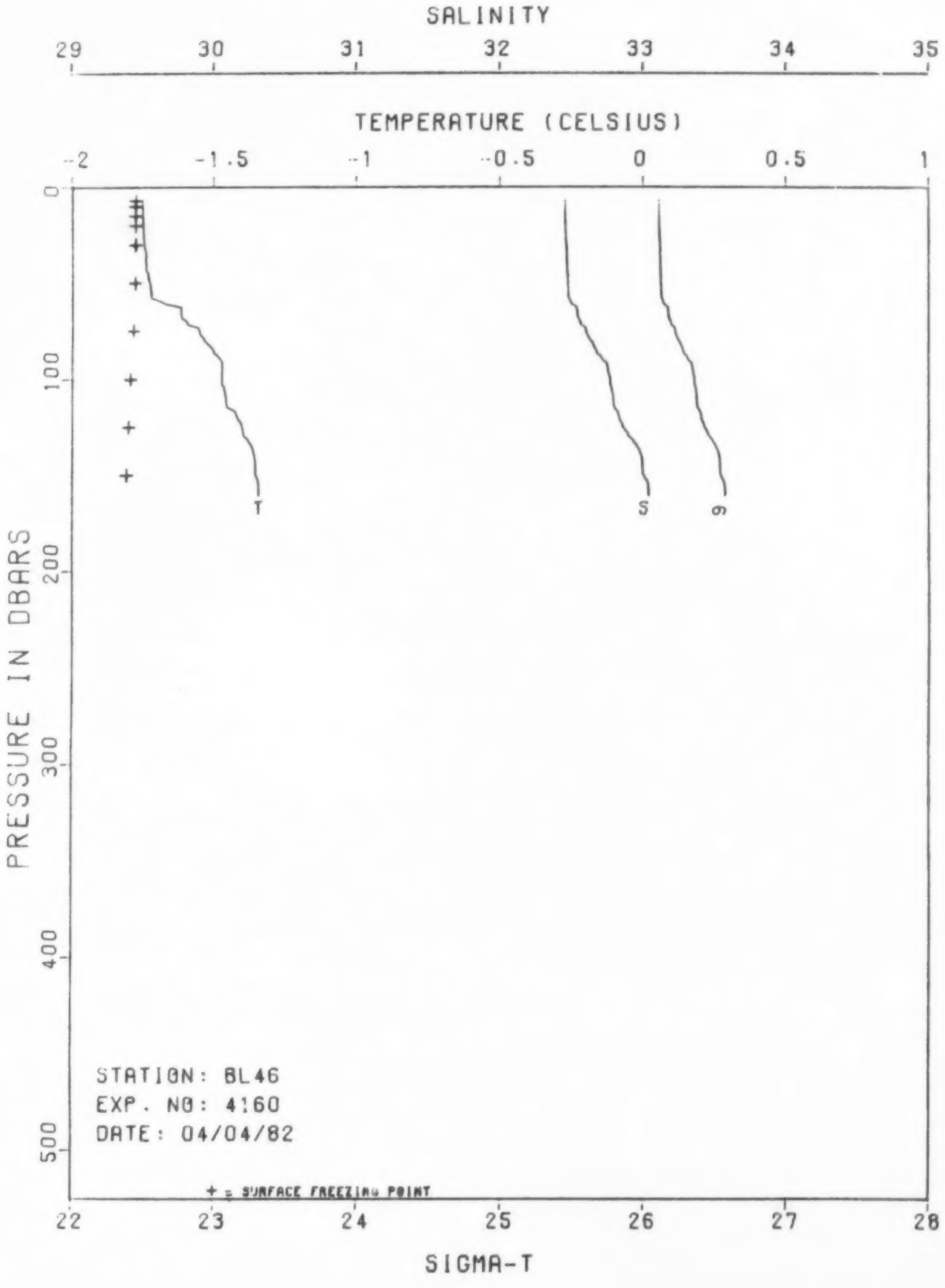
CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE M6   EXPERIMENT 4159

LAT.N. 72-58- 0   LON.W. 102-40-54   DATE 4/ 4/82   G.M.T. 2134

ICE THICKNESS 1.5 M   WATER DEPTH 47 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.2	-1.740	.58759	31.746	25.534	.013	1436.7
6.0	-1.741	.58759	31.745	25.534	.015	1436.7
7.0	-1.740	.58760	31.745	25.534	.017	1436.7
8.0	-1.740	.58760	31.745	25.533	.020	1436.7
9.0	-1.740	.58761	31.745	25.533	.022	1436.8
10.0	-1.741	.58762	31.745	25.534	.024	1436.8
11.0	-1.741	.58763	31.745	25.533	.027	1436.8
12.0	-1.740	.58764	31.745	25.533	.029	1436.8
13.0	-1.741	.58765	31.745	25.533	.032	1436.8
14.0	-1.740	.58767	31.745	25.534	.034	1436.8
15.0	-1.740	.58769	31.745	25.533	.037	1436.9
16.0	-1.740	.58769	31.745	25.534	.039	1436.9
17.0	-1.740	.58771	31.746	25.534	.041	1436.9
18.0	-1.740	.58772	31.745	25.533	.044	1436.9
19.0	-1.740	.58773	31.745	25.533	.046	1436.9
20.0	-1.739	.58775	31.745	25.534	.049	1437.0
21.0	-1.739	.58774	31.744	25.533	.051	1437.0
22.0	-1.739	.58776	31.745	25.533	.054	1437.0
23.0	-1.740	.58778	31.746	25.534	.056	1437.0
24.0	-1.739	.58779	31.745	25.533	.059	1437.0
25.0	-1.739	.58780	31.745	25.534	.061	1437.0
27.5	-1.739	.58784	31.745	25.534	.067	1437.1
30.0	-1.737	.58794	31.748	25.536	.073	1437.1
32.5	-1.735	.58812	31.755	25.542	.079	1437.2
35.0	-1.721	.58906	31.794	25.573	.085	1437.4
37.5	-1.713	.58961	31.817	25.591	.091	1437.5
40.0	-1.696	.59071	31.863	25.628	.097	1437.6
41.9	-1.666	.59272	31.948	25.697	.102	1437.9


SALINITY (PSU)
30
31
32
33
34
35
EXP 4159 72-58.0 N 102-40.9 W
DATE 04/04/82 GMT 2134
STN M6
TEMPERATURE (CELSIUS)
0
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
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STATION: BL46
EXP. NO: 4160
DATE: 04/04/82
+ = SURFACE FREEZING POINT
22
23
24
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26
27
28
SIGMA-T

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CRUISE 015-82-022  ARCTIC ISLANDS-82   SITE 6L46  EXPERIMENT 4160

LAT.N. 74-13- 6     LON.W.  93-41- 5  DATE  4/ 4/82  G.M.T. 2335

ICE THICKNESS    .9 M          WATER DEPTH   163  M

PRESSURE    TEMP     COND. R  SALINITY  SIGMAT      DHA     SOUND
 (DBARS)  (DEG.C)                      (KG/M**3)  (DYN.M)   (M/S)

     7.1   -1.754    .59924    32.452    26.108     .013   1437.7
     8.0   -1.754    .59928    32.453    26.109     .015   1437.7
     9.0   -1.754    .59929    32.453    26.109     .017   1437.7
    10.0   -1.753    .59930    32.452    26.108     .019   1437.7
    11.0   -1.753    .59931    32.452    26.108     .021   1437.7
    12.0   -1.751    .59933    32.451    26.108     .023   1437.8
    13.0   -1.751    .59934    32.451    26.108     .025   1437.8
    14.0   -1.751    .59938    32.453    26.109     .027   1437.8
    15.0   -1.752    .59939    32.453    26.109     .028   1437.8
    16.0   -1.751    .59941    32.453    26.109     .030   1437.8
    17.0   -1.751    .59944    32.454    26.110     .032   1437.8
    18.0   -1.751    .59945    32.454    26.110     .034   1437.9
    19.0   -1.751    .59946    32.454    26.110     .036   1437.9
    20.0   -1.750    .59949    32.454    26.110     .038   1437.9
    21.0   -1.751    .59951    32.456    26.111     .040   1437.9
    22.0   -1.750    .59953    32.456    26.111     .042   1437.9
    23.0   -1.750    .59955    32.456    26.111     .044   1438.0
    24.0   -1.749    .59957    32.456    26.111     .045   1438.0
    25.0   -1.749    .59960    32.456    26.112     .047   1438.0
    27.5   -1.748    .59964    32.456    26.112     .052   1438.0
    30.0   -1.746    .59976    32.463    26.117     .057   1438.1
    32.5   -1.744    .59986    32.463    26.117     .061   1438.1
    35.0   -1.742    .59998    32.465    26.119     .066   1438.2
    37.5   -1.742    .60001    32.465    26.119     .071   1438.2
    40.0   -1.740    .60009    32.466    26.119     .076   1438.3
    42.5   -1.740    .60011    32.467    26.120     .080   1438.3
    45.0   -1.734    .60029    32.469    26.121     .085   1438.4
    47.5   -1.730    .60040    32.469    26.122     .090   1438.5
    50.0   -1.728    .60048    32.470    26.122     .094   1438.5
    55.0   -1.723    .60069    32.474    26.126     .104   1438.6
    60.0   -1.684    .60177    32.493    26.140     .113   1438.9
    65.0   -1.617    .60384    32.539    26.176     .122   1439.4
    70.0   -1.597    .60459    32.559    26.192     .131   1439.6
    75.0   -1.552    .60621    32.602    26.225     .140   1439.9
    80.0   -1.534    .60703    32.628    26.246     .149   1440.1
    85.0   -1.503    .60837    32.670    26.280     .158   1440.4
    90.0   -1.477    .60970    32.717    26.317     .166   1440.7
    95.0   -1.472    .61048    32.754    26.347     .175   1440.9
   100.0   -1.473    .61077    32.770    26.360     .183   1441.0
   105.0   -1.464    .61117    32.780    26.368     .191   1441.1
   110.0   -1.458    .61153    32.792    26.377     .199   1441.2
   115.0   -1.453    .61179    32.799    26.383     .208   1441.3
   120.0   -1.418    .61306    32.832    26.409     .216   1441.6
   125.0   -1.400    .61393    32.860    26.431     .224   1441.8
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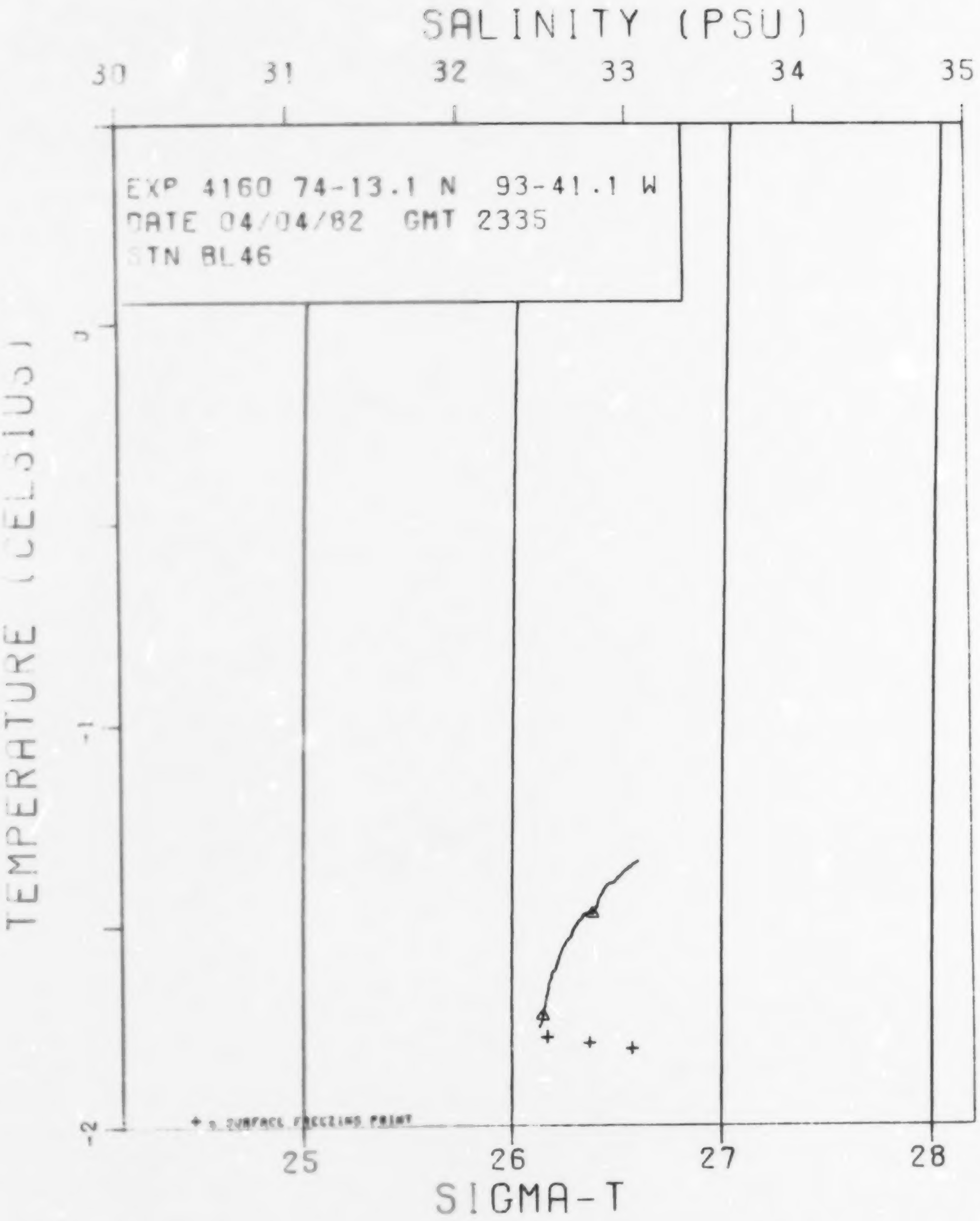
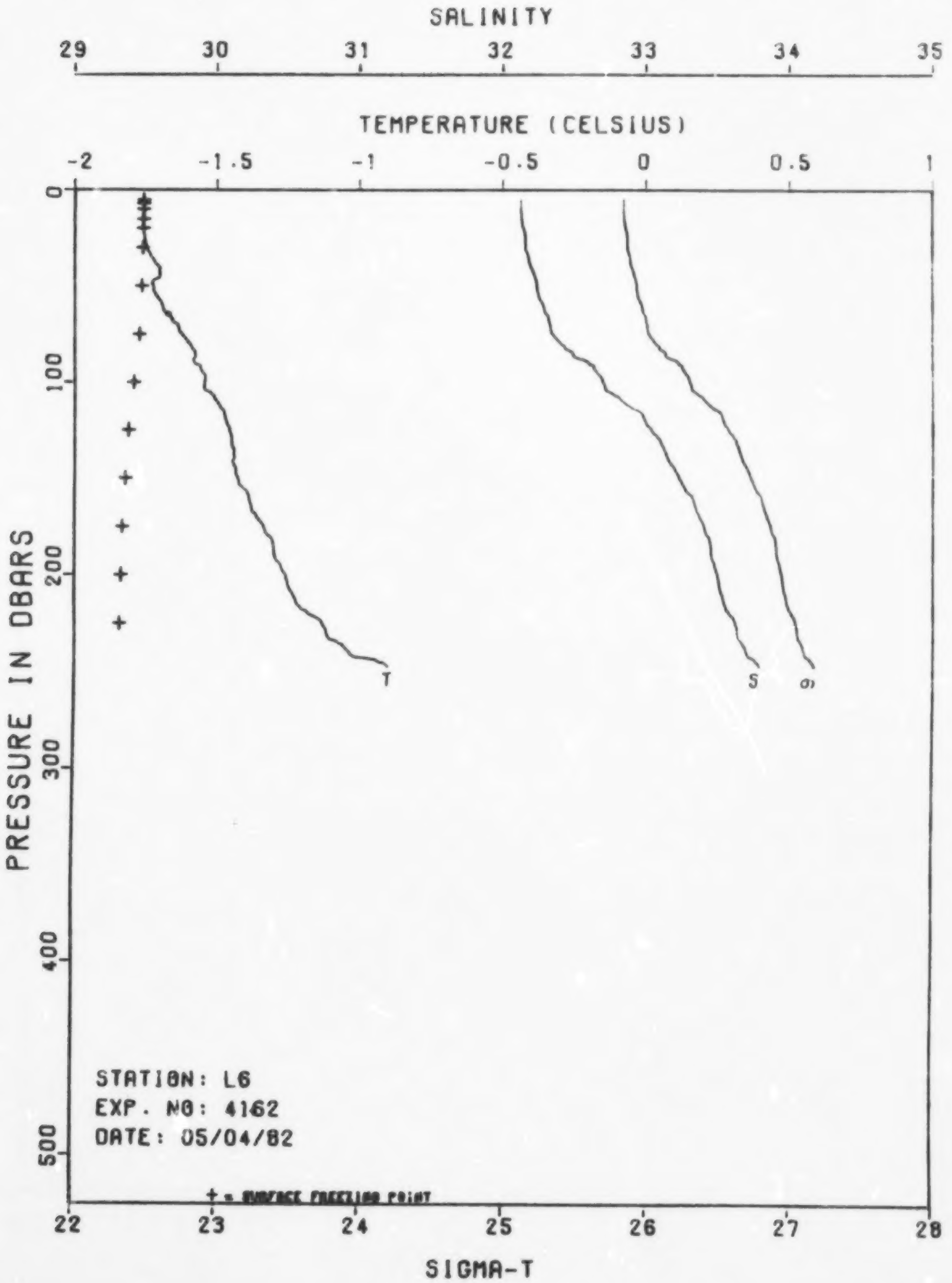
SITE 6L46 EXPERIMENT 4160

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMA T (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
130.0	-1.392	.61484	32.962	26.465	.231	1442.0
135.0	-1.368	.61633	32.960	26.512	.239	1442.3
140.0	-1.356	.61703	32.987	26.533	.246	1442.5
145.0	-1.355	.61730	32.997	26.541	.254	1442.6
150.0	-1.354	.61740	32.999	26.543	.261	1442.7
155.0	-1.343	.61826	33.035	26.571	.266	1442.9
160.0	-1.343	.61843	33.041	26.576	.276	1442.9
160.9	-1.342	.61845	33.041	26.576	.277	1443.0


SALINITY (PSU)
30
31
32
33
34
35
EXP 4160 74-13.1 N 93-41.1 W
DATE 04/04/82 GMT 2335
STN BL46
TEMPERATURE (CELSIUS)
0
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
29
30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
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300
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500
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STATION: L6
EXP. NO: 4162
DATE: 05/04/82
+ = SURFACE FREEZING POINT
22
23
24
25
26
27
28
SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE L6   EXPERIMENT 4162

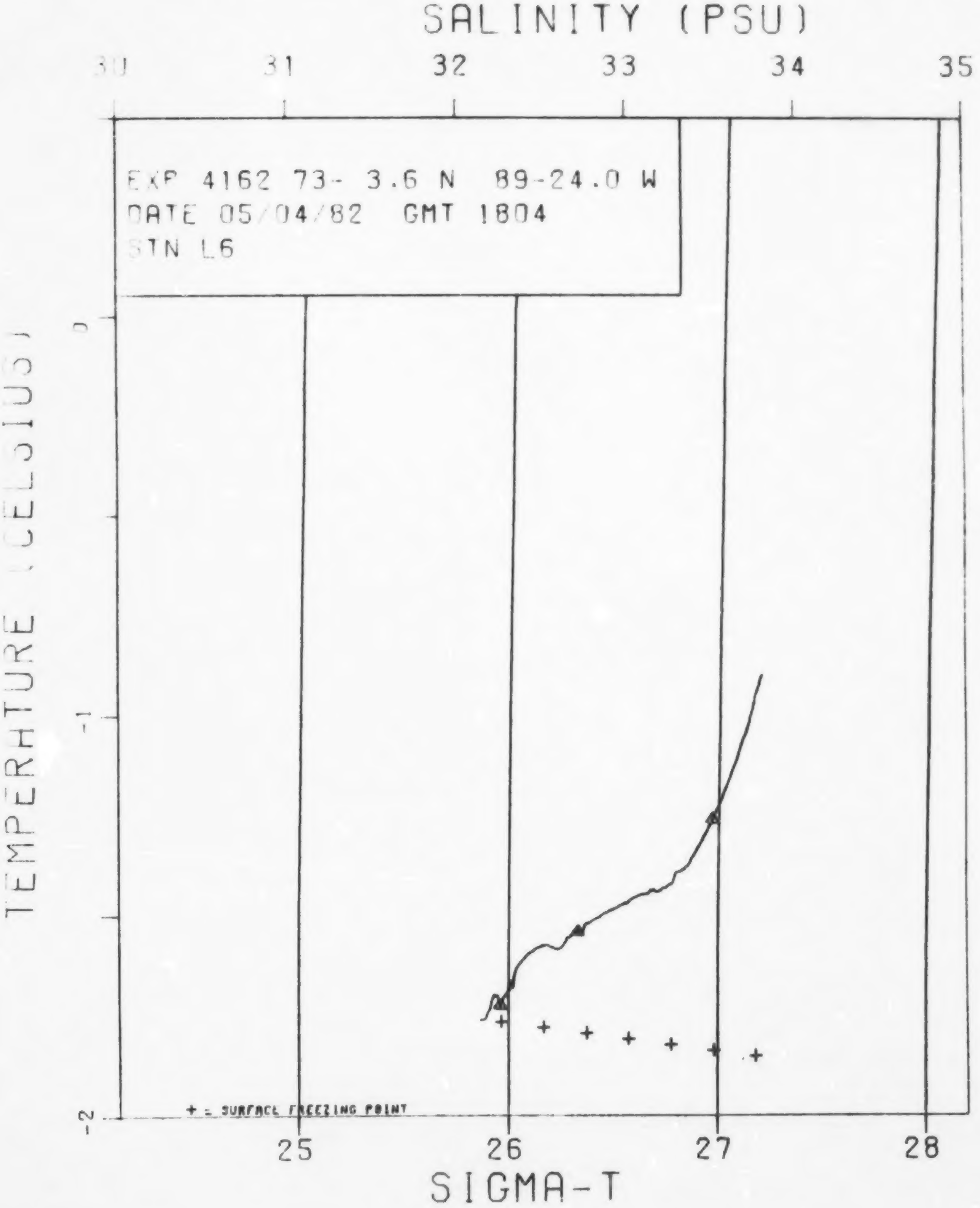
LAT.N. 73- 7-35   LON.W. 89-24- 0   DATE 5/ 4/82   G.M.T. 1804

ICE THICKNESS 1.3 M   WATER DEPTH 250 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.1	-1.761	.59363	32.126	25.844	.011	1437.1
6.0	-1.761	.59363	32.126	25.844	.013	1437.2
7.0	-1.760	.59364	32.125	25.843	.015	1437.2
8.0	-1.760	.59367	32.126	25.844	.017	1437.2
9.0	-1.760	.59368	32.126	25.844	.019	1437.2
10.0	-1.760	.59366	32.124	25.842	.021	1437.2
11.0	-1.760	.59369	32.126	25.843	.024	1437.2
12.0	-1.760	.59370	32.126	25.843	.026	1437.3
13.0	-1.760	.59375	32.128	25.845	.028	1437.3
14.0	-1.760	.59377	32.129	25.846	.030	1437.3
15.0	-1.760	.59381	32.130	25.847	.032	1437.3
16.0	-1.759	.59384	32.131	25.847	.034	1437.3
17.0	-1.761	.59388	32.134	25.850	.036	1437.3
18.0	-1.760	.59390	32.134	25.850	.039	1437.4
19.0	-1.759	.59395	32.136	25.851	.041	1437.4
20.0	-1.760	.59410	32.144	25.858	.043	1437.4
21.0	-1.759	.59418	32.148	25.862	.045	1437.4
22.0	-1.759	.59428	32.152	25.865	.047	1437.5
23.0	-1.756	.59439	32.156	25.868	.049	1437.5
24.0	-1.756	.59442	32.157	25.868	.051	1437.5
25.0	-1.756	.59445	32.158	25.869	.053	1437.5
27.5	-1.751	.59458	32.159	25.870	.059	1437.6
30.0	-1.749	.59466	32.159	25.870	.064	1437.7
32.5	-1.738	.59506	32.171	25.879	.069	1437.8
35.0	-1.730	.59544	32.183	25.889	.075	1437.9
37.5	-1.717	.59578	32.187	25.893	.080	1438.0
40.0	-1.704	.59620	32.196	25.899	.085	1438.1
42.5	-1.703	.59651	32.212	25.912	.090	1438.1
45.0	-1.700	.59679	32.224	25.922	.095	1438.2
47.5	-1.729	.59649	32.236	25.932	.101	1438.1
50.0	-1.723	.59669	32.240	25.935	.106	1438.2
55.0	-1.714	.59707	32.250	25.943	.116	1438.4
60.0	-1.692	.59811	32.264	25.970	.126	1438.6
65.0	-1.682	.59877	32.310	25.992	.136	1438.8
70.0	-1.637	.60001	32.331	26.008	.146	1439.1
75.0	-1.623	.60066	32.351	26.023	.156	1439.3
80.0	-1.596	.60219	32.409	26.070	.166	1439.5
85.0	-1.575	.60400	32.490	26.135	.175	1439.8
90.0	-1.579	.60592	32.605	26.229	.184	1440.1
95.0	-1.550	.60746	32.661	26.274	.193	1440.4
100.0	-1.541	.60834	32.701	26.306	.202	1440.5
105.0	-1.525	.60938	32.741	26.336	.210	1440.8
110.0	-1.498	.61165	32.843	26.420	.218	1441.1
115.0	-1.474	.61404	32.955	26.510	.226	1441.5

SITE L6 EXPERIMENT #162

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.466	.61492	32.995	26.542	.233	1441.6
125.0	-1.454	.61601	33.043	26.581	.241	1441.8
130.0	-1.446	.61723	33.103	26.630	.248	1442.1
135.0	-1.438	.61791	33.131	26.652	.255	1442.2
140.0	-1.438	.61840	33.157	26.673	.262	1442.3
145.0	-1.431	.61935	33.201	26.709	.268	1442.5
150.0	-1.424	.62006	33.233	26.735	.275	1442.7
155.0	-1.408	.62105	33.270	26.764	.281	1442.9
160.0	-1.384	.62248	33.325	26.806	.287	1443.2
165.0	-1.377	.62303	33.347	26.825	.293	1443.3
170.0	-1.360	.62383	33.371	26.845	.299	1443.5
175.0	-1.334	.62495	33.406	26.872	.305	1443.7
180.0	-1.315	.62574	33.428	26.890	.311	1443.9
185.0	-1.301	.62639	33.447	26.905	.317	1444.1
190.0	-1.296	.62664	33.454	26.910	.322	1444.2
195.0	-1.276	.62751	33.478	26.929	.328	1444.5
200.0	-1.259	.62821	33.497	26.944	.333	1444.6
210.0	-1.233	.62927	33.525	26.966	.344	1445.0
220.0	-1.174	.63147	33.582	27.010	.355	1445.5
230.0	-1.115	.63367	33.638	27.054	.365	1446.0
240.0	-1.032	.63648	33.704	27.104	.374	1446.6
247.4	-.696	.64070	33.795	27.173	.381	1447.5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EXP 4162 73- 3.6 N 89-24.0 W
DATE 05/04/82 GMT 1804
STN L6
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-2
+ = SURFACE FREEZING POINT
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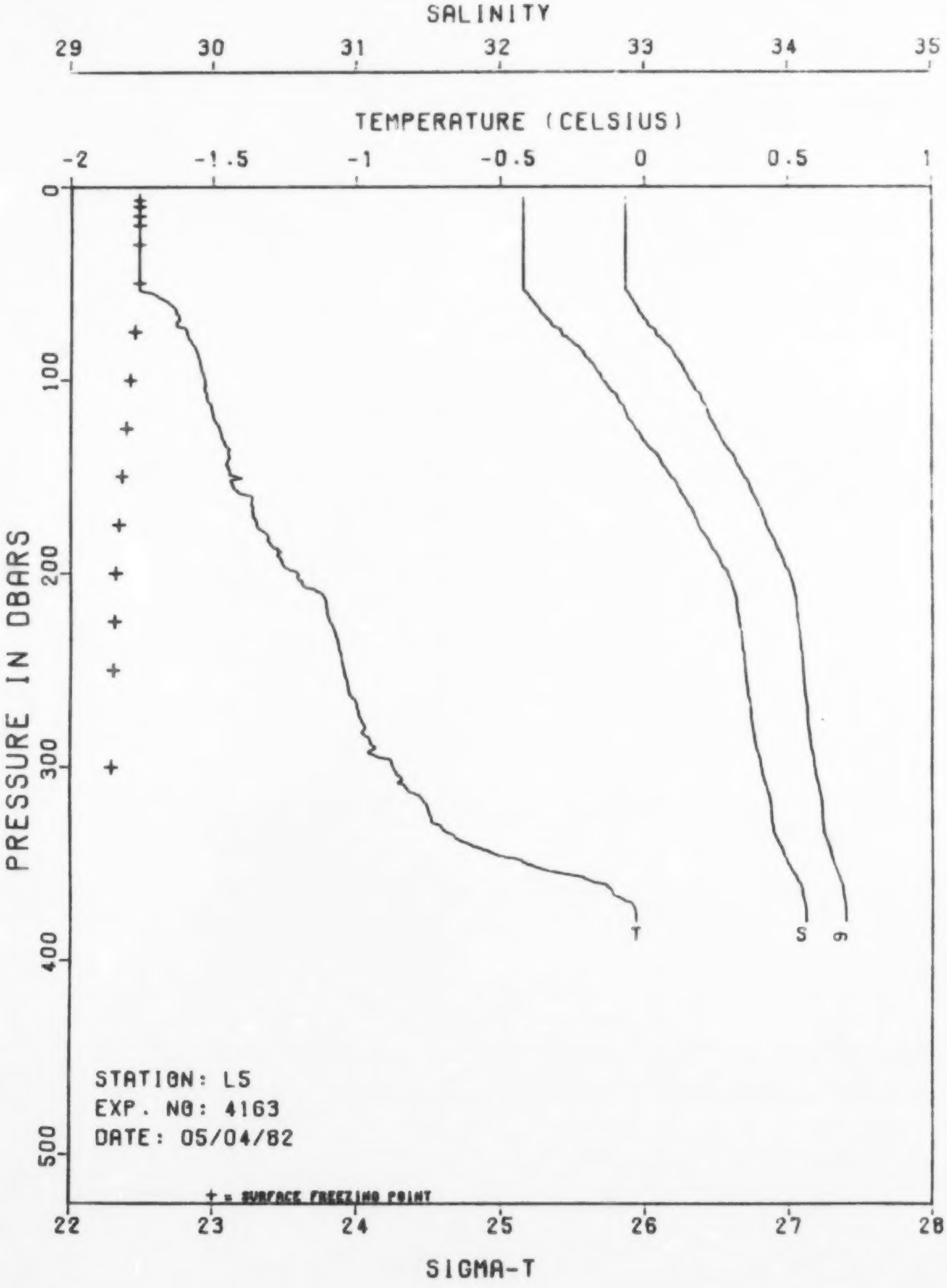
27
28
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: L5
EXP. NO: 4163
DATE: 05/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE L5 EXPERIMENT #163

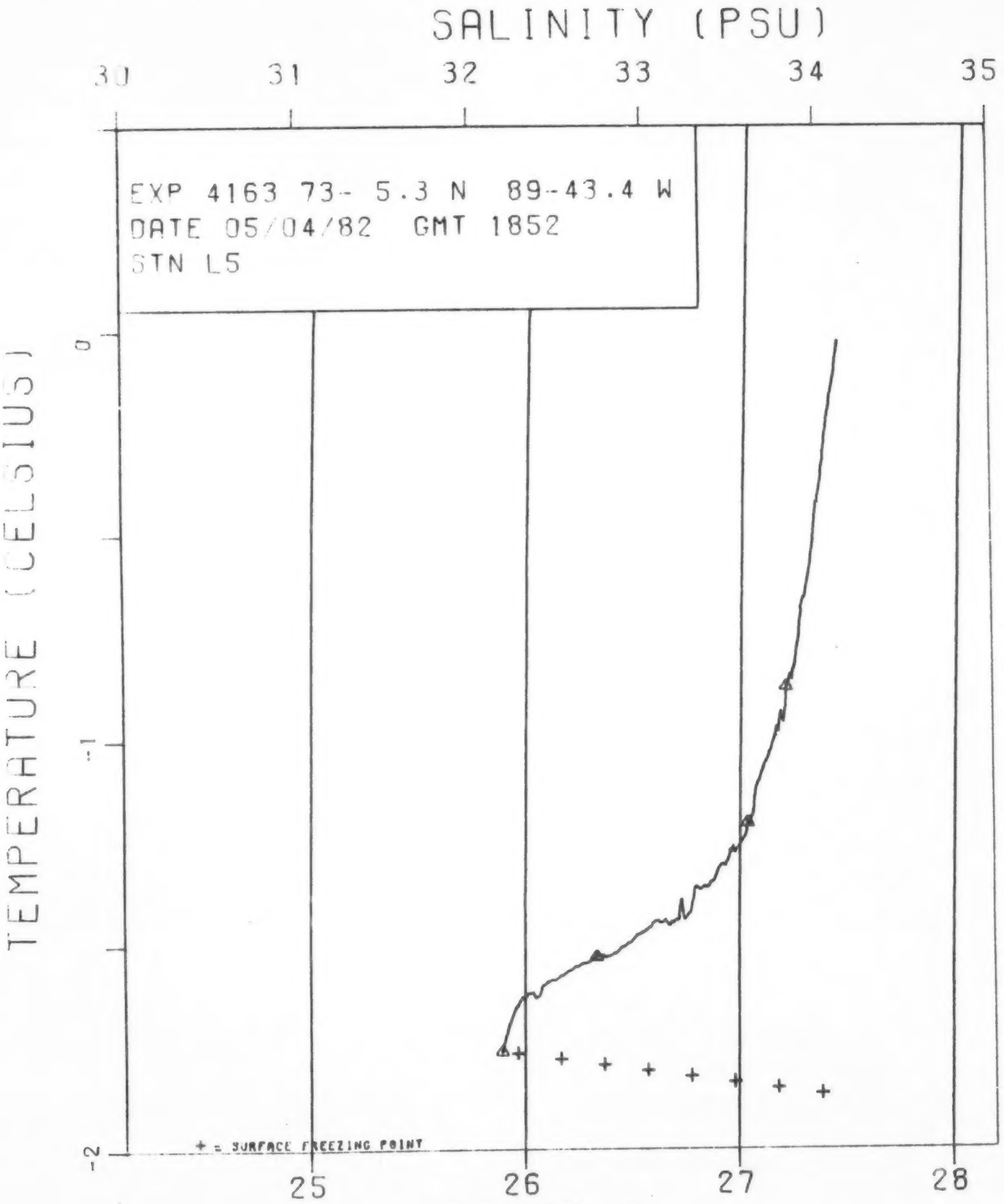
LAT.N. 73- 5-16 LON.W. 89-43-24 DATE 5/ 4/82 G.M.T. 1852

ICE THICKNESS 1.5 M WATER DEPTH 381 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.5	-1.763	.59408	32.155	25.867	.012	1437.2
6.0	-1.762	.59410	32.155	25.867	.013	1437.2
7.0	-1.762	.59411	32.155	25.867	.015	1437.2
8.0	-1.762	.59412	32.155	25.867	.017	1437.2
9.0	-1.762	.59412	32.155	25.867	.019	1437.2
10.0	-1.762	.59414	32.155	25.867	.021	1437.3
11.0	-1.762	.59415	32.155	25.867	.023	1437.3
12.0	-1.762	.59416	32.155	25.867	.025	1437.3
13.0	-1.762	.59418	32.156	25.868	.028	1437.3
14.0	-1.762	.59418	32.155	25.867	.030	1437.3
15.0	-1.762	.59419	32.155	25.867	.032	1437.3
16.0	-1.762	.59420	32.155	25.867	.034	1437.4
17.0	-1.762	.59422	32.155	25.867	.036	1437.4
18.0	-1.761	.59422	32.154	25.866	.038	1437.4
19.0	-1.762	.59423	32.155	25.867	.040	1437.4
20.0	-1.762	.59424	32.155	25.867	.042	1437.4
21.0	-1.762	.59425	32.155	25.867	.045	1437.4
22.0	-1.762	.59427	32.155	25.867	.047	1437.5
23.0	-1.762	.59428	32.155	25.867	.049	1437.5
24.0	-1.762	.59428	32.155	25.867	.051	1437.5
25.0	-1.762	.59429	32.155	25.867	.053	1437.5
27.5	-1.761	.59432	32.155	25.867	.058	1437.5
30.0	-1.761	.59435	32.154	25.866	.064	1437.6
32.5	-1.762	.59438	32.155	25.867	.069	1437.6
35.0	-1.762	.59438	32.154	25.866	.074	1437.7
37.5	-1.762	.59441	32.154	25.866	.080	1437.7
40.0	-1.761	.59445	32.155	25.867	.085	1437.8
42.5	-1.761	.59449	32.155	25.867	.090	1437.8
45.0	-1.762	.59451	32.155	25.867	.095	1437.8
47.5	-1.761	.59453	32.155	25.867	.101	1437.9
50.0	-1.761	.59456	32.155	25.867	.106	1437.9
55.0	-1.722	.59576	32.180	25.887	.117	1438.2
60.0	-1.660	.59782	32.233	25.928	.127	1438.7
65.0	-1.628	.59918	32.275	25.962	.137	1439.0
70.0	-1.630	.60047	32.350	26.023	.147	1439.1
75.0	-1.593	.60238	32.420	26.079	.157	1439.5
80.0	-1.575	.60398	32.492	26.137	.166	1439.8
85.0	-1.560	.60553	32.565	26.196	.176	1440.0
90.0	-1.547	.60677	32.621	26.241	.184	1440.2
95.0	-1.541	.60773	32.667	26.279	.193	1440.4
100.0	-1.530	.60867	32.708	26.311	.202	1440.6
105.0	-1.533	.60958	32.763	26.356	.210	1440.8
110.0	-1.523	.61077	32.818	26.400	.218	1441.0
115.0	-1.505	.61195	32.865	26.438	.226	1441.2

SITE L5   EXPERIMENT 4163

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.498	.61250	32.886	26.455	.234	1441.3
125.0	-1.476	.61384	32.939	26.498	.242	1441.6
130.0	-1.469	.61478	32.963	26.533	.249	1441.8
135.0	-1.447	.61613	33.036	26.575	.256	1442.0
140.0	-1.444	.61733	33.100	26.627	.263	1442.2
145.0	-1.445	.61798	33.137	26.657	.270	1442.4
150.0	-1.423	.61930	33.187	26.697	.277	1442.6
155.0	-1.429	.61998	33.231	26.733	.284	1442.7
160.0	-1.365	.62195	33.273	26.765	.290	1443.2
165.0	-1.368	.62266	33.314	26.799	.296	1443.3
170.0	-1.358	.62352	33.351	26.829	.302	1443.5
175.0	-1.345	.62428	33.378	26.850	.308	1443.7
180.0	-1.309	.62577	33.423	26.885	.314	1444.0
185.0	-1.296	.62673	33.462	26.916	.320	1444.2
190.0	-1.277	.62791	33.507	26.952	.325	1444.4
195.0	-1.258	.62878	33.533	26.973	.331	1444.6
200.0	-1.205	.63070	33.583	27.012	.336	1445.0
210.0	-1.124	.63313	33.629	27.047	.346	1445.6
220.0	-1.101	.63398	33.647	27.060	.356	1445.9
230.0	-1.076	.63496	33.670	27.078	.365	1446.2
240.0	-1.059	.63558	33.682	27.087	.375	1446.5
250.0	-1.042	.63636	33.702	27.103	.384	1446.8
260.0	-1.027	.63703	33.718	27.115	.394	1447.0
270.0	-.996	.63812	33.741	27.133	.403	1447.4
280.0	-.967	.63903	33.755	27.143	.412	1447.7
290.0	-.930	.64027	33.780	27.162	.421	1448.1
300.0	-.871	.64208	33.814	27.187	.429	1448.5
310.0	-.829	.64370	33.854	27.218	.438	1449.0
320.0	-.753	.64578	33.884	27.239	.446	1449.5
330.0	-.706	.64699	33.895	27.246	.454	1449.9
340.0	-.602	.64997	33.945	27.283	.462	1450.6
350.0	-.410	.65477	34.000	27.319	.470	1451.8
360.0	-.159	.66111	34.077	27.369	.477	1453.2
370.0	-.044	.66418	34.117	27.396	.483	1453.9
380.0	-.028	.66477	34.127	27.403	.490	1454.2
380.3	-.028	.66477	34.127	27.403	.490	1454.2


SALINITY (PSU)
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31
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35
EXP 4163 73- 5.3 N 89-43.4 W
DATE 05/04/82 GMT 1852
STN L5
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
25
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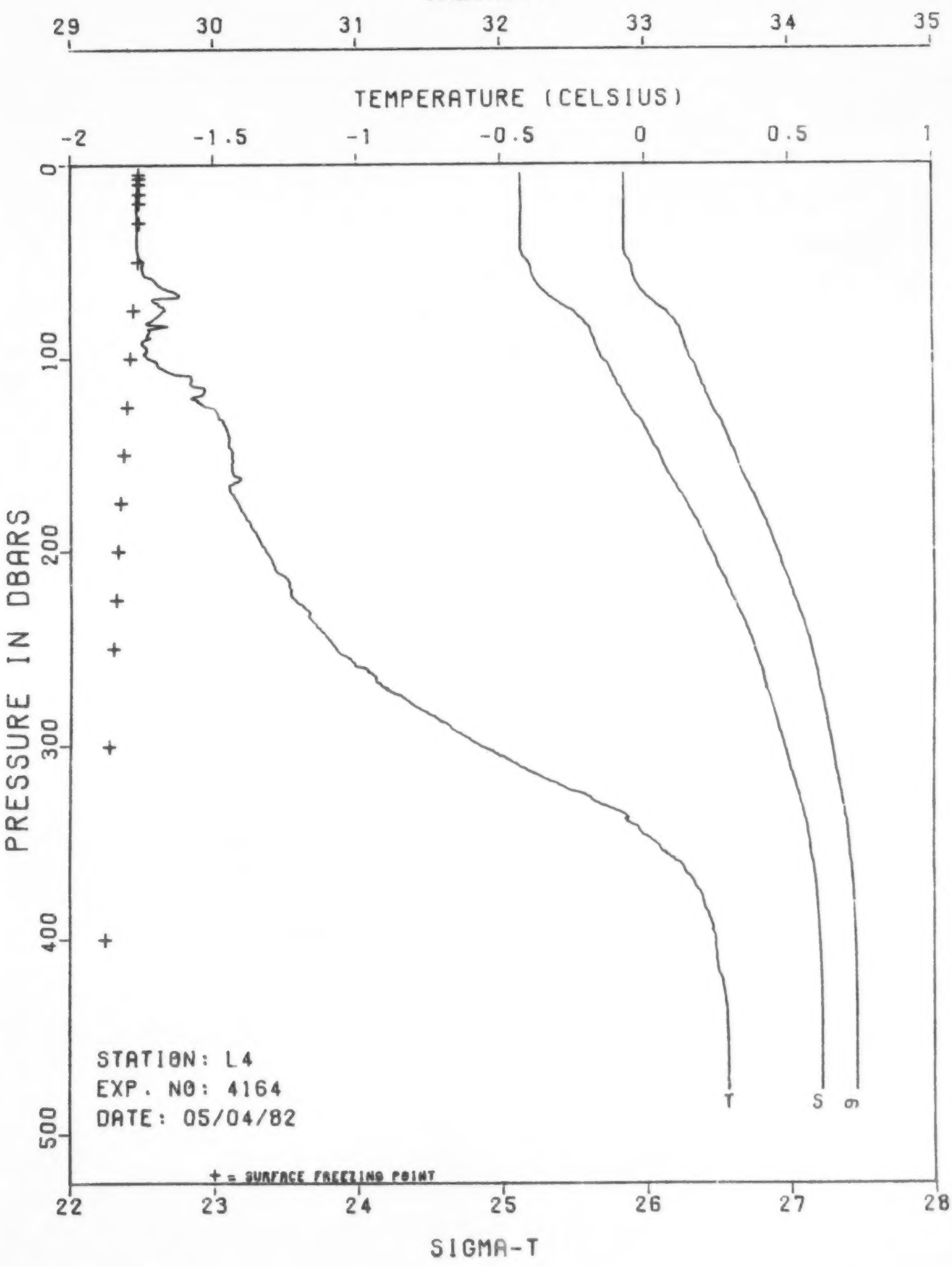
SIGMA-T


SALINITY
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31
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TEMPERATURE (CELSIUS)
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-1
-0.5
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PRESSURE IN DBARS
0
100
200
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STATION: L4
EXP. NO: 4164
DATE: 05/04/82
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+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE L4 EXPERIMENT 4164

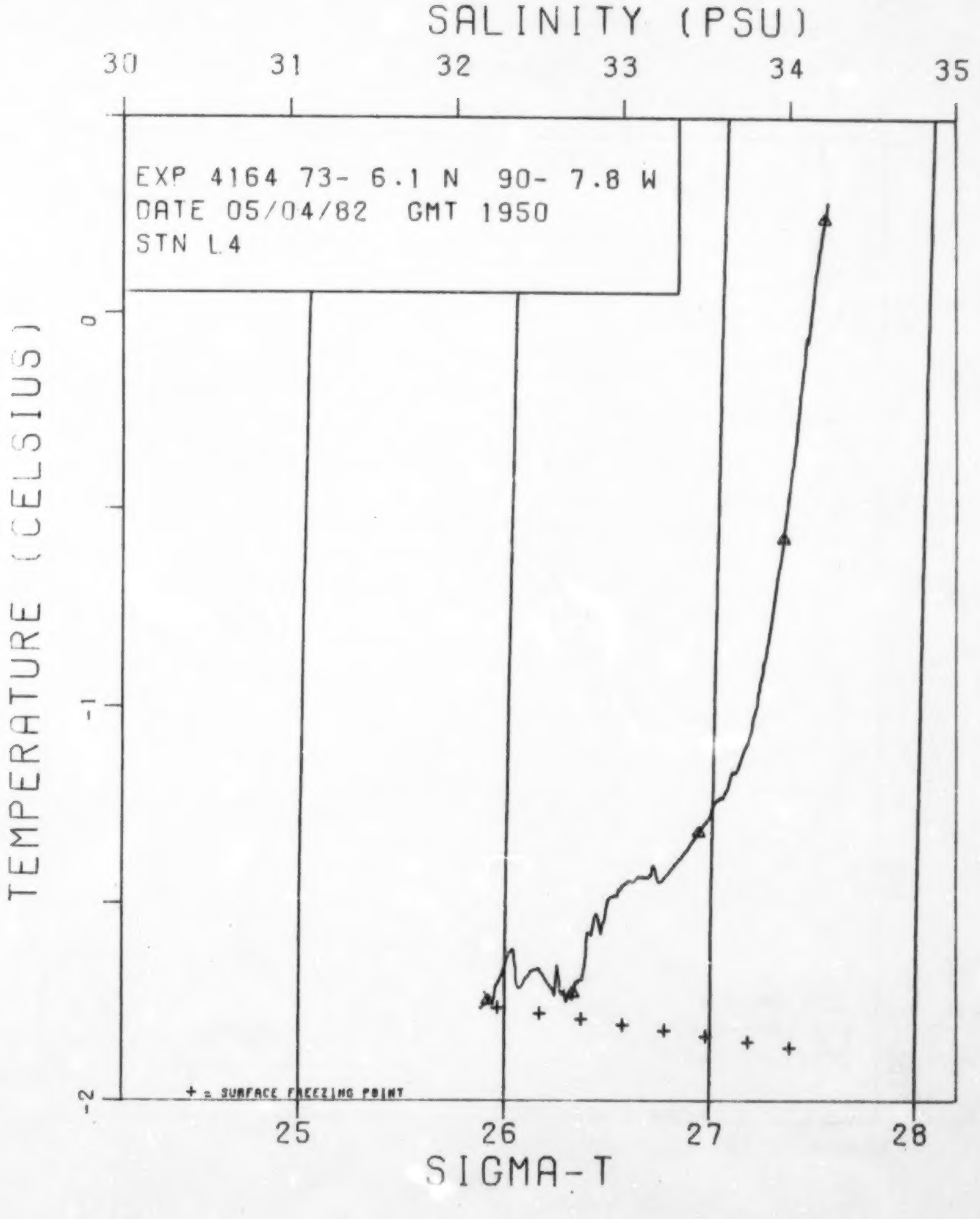
LAT.N. 73- 6- 6 LON.W. 90- 7-48 DATE 5/ 4/82 G.M.T. 1950

ICE THICKNESS 1.4 M WATER DEPTH 477 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.8	-1.765	.59379	32.140	25.855	.010	1437.1
5.0	-1.765	.59381	32.142	25.857	.011	1437.1
6.0	-1.764	.59384	32.142	25.856	.013	1437.2
7.0	-1.765	.59385	32.143	25.856	.015	1437.2
8.0	-1.765	.59396	32.144	25.858	.017	1437.2
9.0	-1.766	.59387	32.144	25.858	.019	1437.2
10.0	-1.767	.59388	32.145	25.859	.021	1437.2
11.0	-1.766	.59389	32.144	25.858	.023	1437.2
12.0	-1.767	.59391	32.145	25.859	.026	1437.3
13.0	-1.766	.59392	32.144	25.858	.028	1437.3
14.0	-1.766	.59394	32.145	25.859	.030	1437.3
15.0	-1.767	.59395	32.146	25.860	.032	1437.3
16.0	-1.766	.59395	32.145	25.859	.034	1437.3
17.0	-1.767	.59397	32.146	25.860	.036	1437.3
18.0	-1.767	.59398	32.146	25.860	.038	1437.4
19.0	-1.766	.59399	32.145	25.859	.041	1437.4
20.0	-1.767	.59400	32.147	25.860	.043	1437.4
21.0	-1.768	.59402	32.148	25.861	.045	1437.4
22.0	-1.766	.59402	32.146	25.859	.047	1437.4
23.0	-1.768	.59403	32.147	25.861	.049	1437.4
24.0	-1.768	.59405	32.148	25.861	.051	1437.4
25.0	-1.766	.59406	32.145	25.859	.053	1437.5
27.5	-1.766	.59409	32.145	25.859	.059	1437.5
30.0	-1.765	.59412	32.146	25.860	.064	1437.6
32.5	-1.766	.59414	32.146	25.860	.069	1437.6
35.0	-1.765	.59417	32.145	25.859	.075	1437.6
37.5	-1.765	.59419	32.145	25.859	.080	1437.7
40.0	-1.766	.59422	32.146	25.860	.085	1437.7
42.5	-1.765	.59425	32.146	25.859	.091	1437.8
45.0	-1.764	.59434	32.148	25.861	.096	1437.8
47.5	-1.760	.59464	32.160	25.871	.101	1437.9
50.0	-1.744	.59552	32.194	25.898	.106	1438.1
55.0	-1.746	.59589	32.217	25.917	.117	1438.1
60.0	-1.704	.59721	32.243	25.938	.127	1438.5
65.0	-1.651	.59909	32.295	25.976	.137	1438.9
70.0	-1.712	.59939	32.376	26.045	.147	1438.8
75.0	-1.666	.60203	32.481	26.130	.157	1439.2
80.0	-1.714	.60265	32.566	26.200	.166	1439.2
85.0	-1.731	.60342	32.626	26.249	.175	1439.3
90.0	-1.730	.60386	32.650	26.268	.183	1439.4
95.0	-1.733	.60427	32.673	26.288	.192	1439.5
100.0	-1.728	.60484	32.699	26.306	.201	1439.7
105.0	-1.682	.60673	32.758	26.355	.209	1440.0
110.0	-1.574	.60924	32.785	26.374	.217	1440.7

SITE L4 EXPERIMENT 4164

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.546	.61050	32.825	26.407	.225	1440.9
120.0	-1.571	.61074	32.863	26.438	.233	1441.0
125.0	-1.527	.61215	32.895	26.463	.241	1441.3
130.0	-1.483	.61379	32.940	26.499	.249	1441.7
135.0	-1.458	.61522	32.994	26.541	.256	1441.9
140.0	-1.445	.61604	33.025	26.567	.263	1442.1
145.0	-1.445	.61666	33.059	26.594	.271	1442.2
150.0	-1.433	.61766	33.102	26.628	.278	1442.4
155.0	-1.436	.61812	33.129	26.650	.284	1442.5
160.0	-1.429	.61879	33.158	26.674	.291	1442.7
165.0	-1.433	.61952	33.202	26.709	.298	1442.8
170.0	-1.439	.62011	33.240	26.740	.304	1442.9
175.0	-1.416	.62134	33.284	26.776	.311	1443.2
180.0	-1.398	.62228	33.316	26.802	.317	1443.4
185.0	-1.373	.62360	33.363	26.839	.323	1443.7
190.0	-1.355	.62452	33.394	26.864	.329	1443.9
195.0	-1.336	.62540	33.422	26.885	.335	1444.1
200.0	-1.317	.62643	33.458	26.914	.340	1444.3
210.0	-1.283	.62814	33.515	26.959	.351	1444.7
220.0	-1.228	.63042	33.580	27.010	.362	1445.2
230.0	-1.176	.63261	33.645	27.061	.372	1445.7
240.0	-1.129	.63468	33.707	27.110	.381	1446.2
250.0	-1.071	.63676	33.758	27.149	.390	1446.7
260.0	-.974	.63956	33.806	27.185	.399	1447.4
270.0	-.908	.64151	33.840	27.210	.408	1447.9
280.0	-.793	.64462	33.886	27.243	.416	1448.7
290.0	-.675	.64766	33.923	27.268	.424	1449.4
300.0	-.573	.65041	33.961	27.295	.432	1450.1
310.0	-.439	.65378	33.999	27.319	.439	1451.0
320.0	-.299	.65731	34.040	27.346	.446	1451.8
330.0	-.155	.66085	34.075	27.368	.453	1452.7
340.0	-.053	.66362	34.114	27.394	.460	1453.4
350.0	.035	.66587	34.137	27.408	.467	1454.0
360.0	.110	.66787	34.162	27.424	.473	1454.5
370.0	.166	.66940	34.179	27.435	.480	1455.0
380.0	.198	.67034	34.191	27.443	.486	1455.3
390.0	.226	.67114	34.199	27.448	.492	1455.6
400.0	.241	.67169	34.207	27.454	.498	1455.9
425.0	.269	.67274	34.221	27.463	.514	1456.4
450.0	.284	.67336	34.224	27.465	.529	1456.9
475.0	.286	.67365	34.224	27.464	.544	1457.3
477.7	.286	.67368	34.224	27.465	.546	1457.4


SALINITY (PSU)
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EXP 4164 73- 6.1 N 90- 7.8 W
DATE 05/04/82 GMT 1950
STN L4
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-1
-2
+ = SURFACE FREEZING POINT
25
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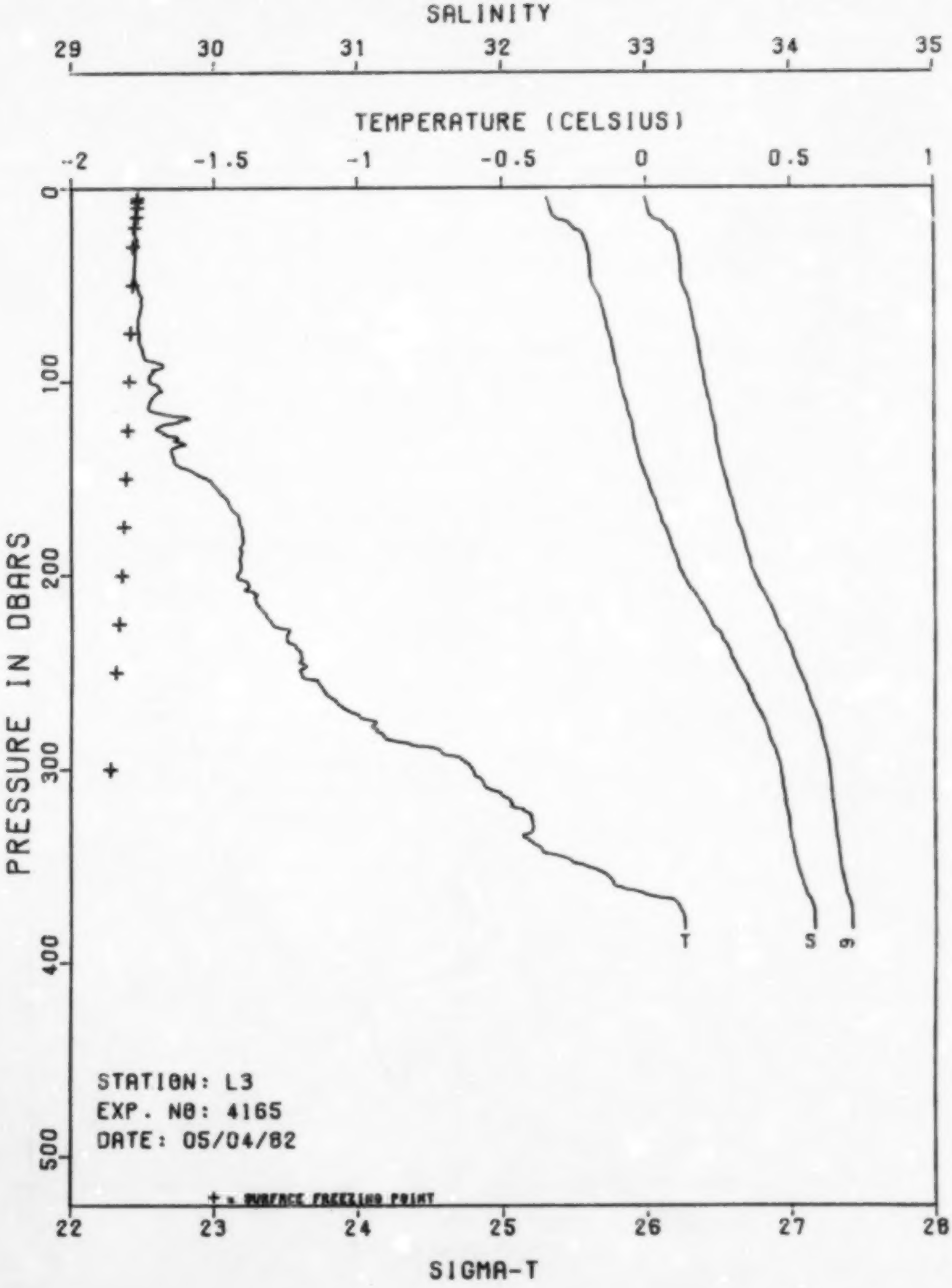
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: L3
EXP. NO: 4165
DATE: 05/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE L3   EXPERIMENT 4165

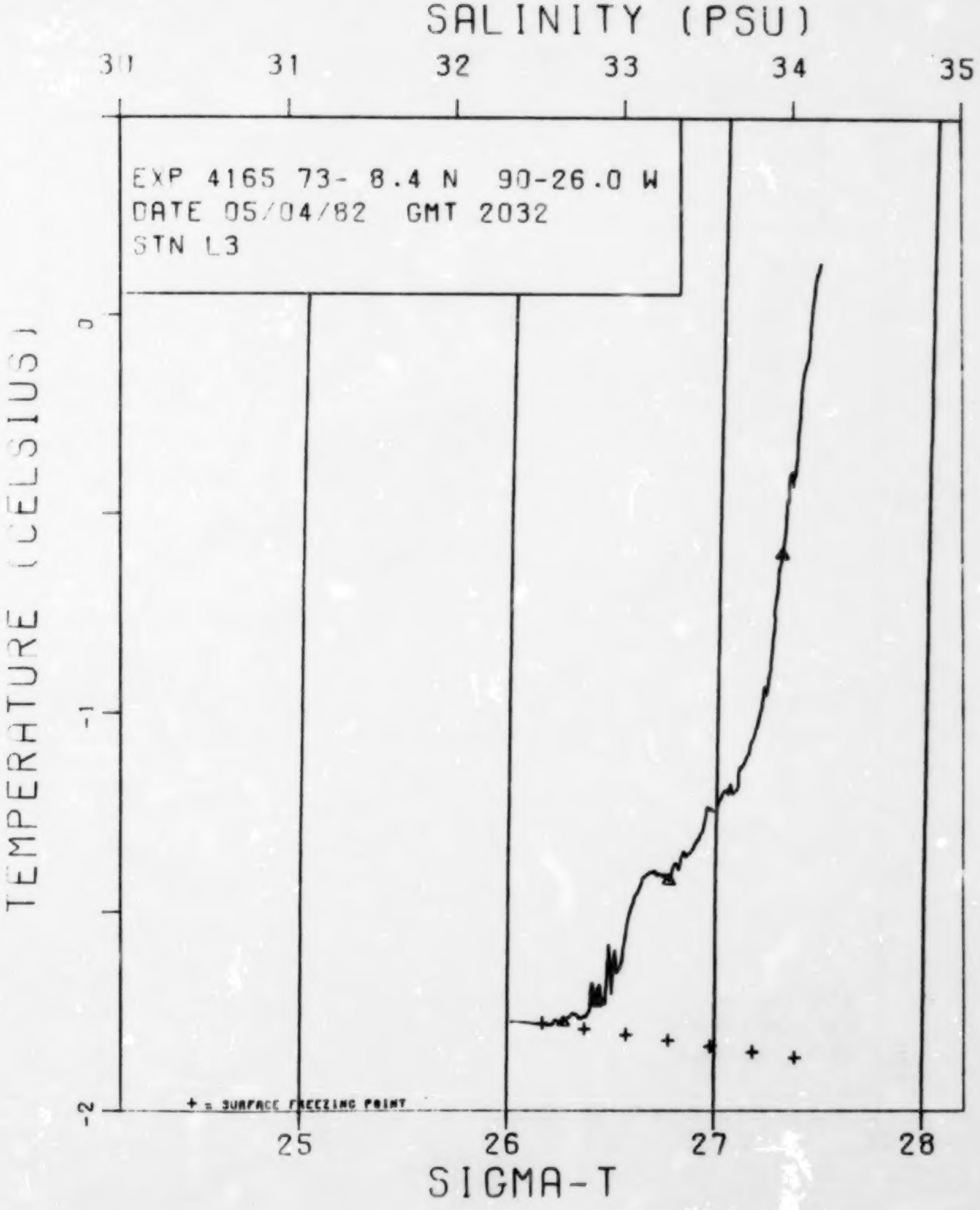
LAT.N. 73- 8-23   LON.W. 90-26- 0   DATE 5/ 4/82   G.M.T. 2032

ICE THICKNESS 1.4 M   WATER DEPTH 384 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.1	-1.775	.59643	32.309	25.992	.010	1437.3
6.0	-1.775	.59657	32.316	25.999	.012	1437.4
7.0	-1.776	.59658	32.317	25.999	.014	1437.4
8.0	-1.775	.59667	32.321	26.002	.016	1437.4
9.0	-1.775	.59677	32.327	26.007	.018	1437.4
10.0	-1.776	.59685	32.331	26.011	.020	1437.4
11.0	-1.776	.59691	32.334	26.013	.022	1437.5
12.0	-1.776	.59701	32.339	26.017	.024	1437.5
13.0	-1.776	.59707	32.343	26.020	.026	1437.5
14.0	-1.776	.59714	32.346	26.023	.028	1437.5
15.0	-1.777	.59742	32.364	26.037	.030	1437.6
16.0	-1.778	.59771	32.381	26.051	.032	1437.6
17.0	-1.780	.59843	32.426	26.088	.034	1437.7
18.0	-1.782	.59899	32.460	26.116	.036	1437.7
19.0	-1.782	.59921	32.473	26.126	.038	1437.8
20.0	-1.782	.59934	32.480	26.132	.040	1437.8
21.0	-1.783	.59963	32.498	26.146	.041	1437.8
22.0	-1.783	.59981	32.508	26.155	.043	1437.9
23.0	-1.783	.60045	32.546	26.185	.045	1437.9
24.0	-1.782	.60063	32.555	26.192	.047	1438.0
25.0	-1.776	.60093	32.566	26.201	.049	1438.0
27.5	-1.771	.60121	32.575	26.208	.053	1438.1
30.0	-1.776	.60138	32.589	26.220	.058	1438.1
32.5	-1.776	.60151	32.596	26.226	.062	1438.2
35.0	-1.778	.60168	32.606	26.234	.067	1438.2
37.5	-1.779	.60171	32.607	26.235	.071	1438.3
40.0	-1.780	.60176	32.609	26.237	.075	1438.3
42.5	-1.781	.60179	32.612	26.239	.080	1438.3
45.0	-1.782	.60183	32.613	26.239	.084	1438.4
47.5	-1.779	.60195	32.615	26.242	.089	1438.4
50.0	-1.778	.60217	32.626	26.250	.093	1438.5
55.0	-1.763	.60306	32.660	26.277	.102	1438.7
60.0	-1.753	.60378	32.689	26.301	.110	1438.9
65.0	-1.762	.60401	32.708	26.317	.119	1438.9
70.0	-1.767	.60420	32.722	26.328	.127	1439.0
75.0	-1.763	.60462	32.740	26.343	.136	1439.1
80.0	-1.762	.60501	32.759	26.358	.144	1439.3
85.0	-1.752	.60550	32.774	26.370	.152	1439.4
90.0	-1.709	.60655	32.786	26.379	.160	1439.7
95.0	-1.710	.60691	32.805	26.395	.168	1439.8
100.0	-1.726	.60684	32.816	26.404	.176	1439.8
105.0	-1.683	.60804	32.837	26.419	.184	1440.1
110.0	-1.722	.60771	32.857	26.437	.192	1440.1
115.0	-1.726	.60796	32.873	26.450	.200	1440.2

SITE L3   EXPERIMENT 4165

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.610	.61058	32.897	26.467	.208	1440.6
125.0	-1.702	.60915	32.911	26.480	.216	1440.5
130.0	-1.623	.61083	32.920	26.485	.223	1441.0
135.0	-1.649	.61067	32.937	26.500	.231	1440.9
140.0	-1.639	.61117	32.952	26.512	.238	1441.1
145.0	-1.599	.61237	32.976	26.530	.246	1441.4
150.0	-1.529	.61419	33.003	26.551	.253	1441.8
155.0	-1.493	.61529	33.025	26.567	.261	1442.1
160.0	-1.460	.61636	33.050	26.587	.268	1442.4
165.0	-1.441	.61724	33.077	26.608	.275	1442.6
170.0	-1.411	.61627	33.100	26.627	.282	1442.9
175.0	-1.405	.61886	33.125	26.647	.289	1443.0
180.0	-1.401	.61953	33.158	26.673	.295	1443.2
185.0	-1.405	.61985	33.178	26.689	.302	1443.3
190.0	-1.406	.62030	33.203	26.710	.309	1443.4
195.0	-1.406	.62073	33.225	26.728	.315	1443.5
200.0	-1.420	.62099	33.253	26.750	.322	1443.5
210.0	-1.346	.62397	33.340	26.819	.334	1444.2
220.0	-1.317	.62603	33.423	26.885	.346	1444.6
230.0	-1.240	.62907	33.508	26.952	.357	1445.2
240.0	-1.196	.63128	33.564	27.012	.366	1445.7
250.0	-1.199	.63229	33.639	27.057	.378	1445.9
260.0	-1.114	.63525	33.711	27.113	.387	1446.6
270.0	-1.027	.63827	33.764	27.169	.396	1447.3
280.0	-.931	.64122	33.843	27.213	.405	1448.0
290.0	-.714	.64641	33.895	27.247	.413	1449.2
300.0	-.601	.64933	33.931	27.271	.421	1450.0
310.0	-.540	.65100	33.953	27.287	.429	1450.4
320.0	-.450	.65319	33.972	27.298	.436	1451.0
330.0	-.394	.65475	33.993	27.312	.444	1451.5
340.0	-.373	.65567	34.016	27.330	.451	1451.8
350.0	-.215	.65933	34.044	27.345	.458	1452.7
360.0	-.115	.66210	34.084	27.373	.465	1453.4
370.0	.108	.66770	34.148	27.412	.472	1454.7
380.0	.130	.66852	34.164	27.424	.478	1455.0
383.3	.130	.66858	34.165	27.425	.481	1455.0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EXP 4165 73- 8.4 N 90-26.0 W
DATE 05/04/82 GMT 2032
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-2
+ = SURFACE FREEZING POINT
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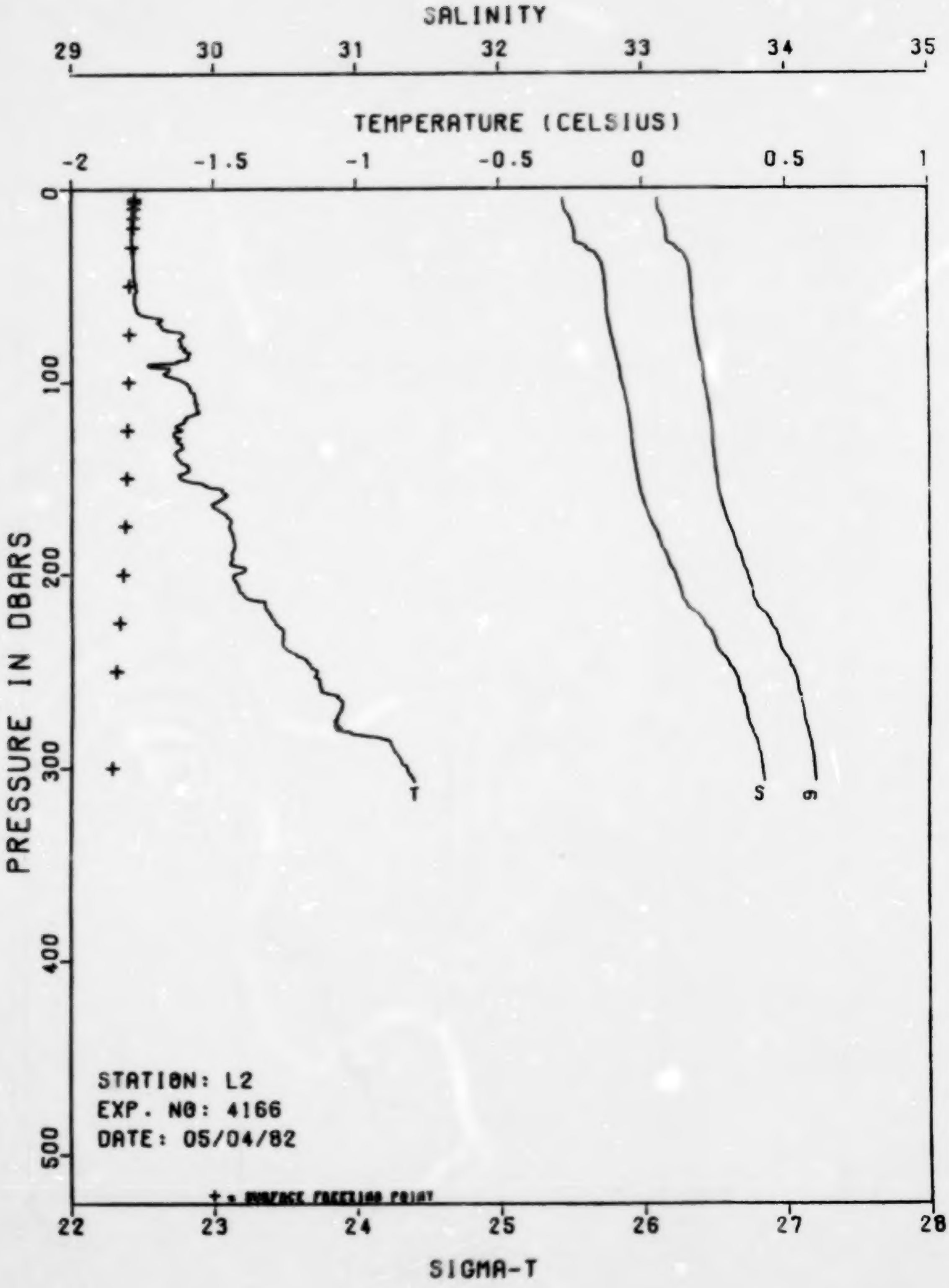
SIGMA-T


SALINITY
29
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31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
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1
PRESSURE IN DBARS
0
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STATION: L2
EXP. NO: 4166
DATE: 05/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE L2 EXPERIMENT 4166

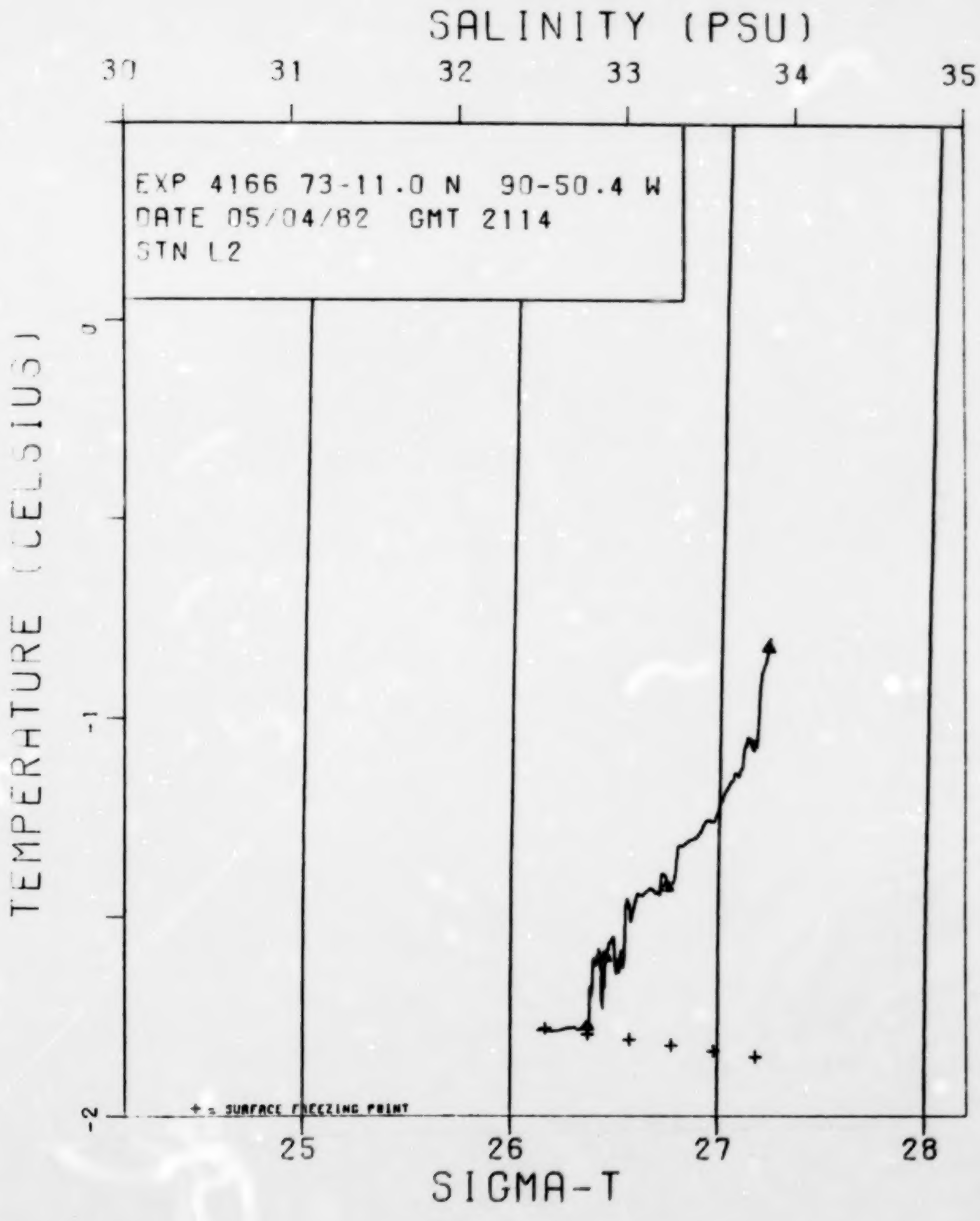
LAT.N. 73-11- 0 LON.W. 90-50-24 DATE 5/ 4/82 G.M.T. 2114

ICE THICKNESS 1.1 M WATER DEPTH 309 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.0	-1.785	.59863	32.450	26.107	.009	1437.5
6.0	-1.783	.59661	32.447	26.105	.011	1437.5
7.0	-1.783	.59870	32.451	26.108	.013	1437.5
8.0	-1.784	.59874	32.454	26.111	.015	1437.5
9.0	-1.783	.59874	32.453	26.109	.017	1437.6
10.0	-1.784	.59881	32.457	26.113	.019	1437.6
11.0	-1.784	.59885	32.459	26.114	.021	1437.6
12.0	-1.784	.59895	32.464	26.119	.023	1437.6
13.0	-1.785	.59917	32.478	26.130	.025	1437.7
14.0	-1.785	.59938	32.490	26.140	.026	1437.7
15.0	-1.785	.59954	32.499	26.147	.028	1437.7
16.0	-1.785	.59966	32.505	26.152	.030	1437.7
17.0	-1.786	.59973	32.510	26.156	.032	1437.8
18.0	-1.785	.59981	32.513	26.158	.034	1437.8
19.0	-1.786	.59983	32.515	26.160	.036	1437.8
20.0	-1.786	.59998	32.523	26.166	.038	1437.8
21.0	-1.787	.60008	32.529	26.172	.039	1437.8
22.0	-1.788	.60011	32.531	26.173	.041	1437.9
23.0	-1.787	.60013	32.530	26.173	.043	1437.9
24.0	-1.786	.60015	32.531	26.173	.045	1437.9
25.0	-1.786	.60016	32.531	26.173	.047	1437.9
27.5	-1.786	.60024	32.534	26.176	.051	1438.0
30.0	-1.780	.60163	32.608	26.236	.056	1438.1
32.5	-1.778	.60219	32.638	26.260	.060	1438.2
35.0	-1.784	.60298	32.690	26.302	.064	1438.3
37.5	-1.781	.60335	32.707	26.316	.069	1438.4
40.0	-1.780	.60367	32.724	26.330	.073	1438.5
42.5	-1.781	.60381	32.732	26.337	.077	1438.5
45.0	-1.776	.60400	32.736	26.340	.081	1438.6
47.5	-1.777	.60407	32.739	26.342	.085	1438.6
50.0	-1.774	.60426	32.745	26.347	.090	1438.7
55.0	-1.778	.60433	32.752	26.352	.098	1438.8
60.0	-1.776	.60443	32.752	26.353	.106	1438.9
65.0	-1.754	.60496	32.757	26.356	.114	1439.0
70.0	-1.686	.60654	32.772	26.367	.123	1439.5
75.0	-1.609	.60822	32.783	26.374	.131	1439.9
80.0	-1.612	.60848	32.800	26.388	.139	1440.0
85.0	-1.580	.60944	32.818	26.401	.147	1440.3
90.0	-1.636	.60882	32.843	26.423	.155	1440.1
95.0	-1.667	.60843	32.848	26.428	.163	1440.1
100.0	-1.599	.60986	32.855	26.432	.171	1440.5
105.0	-1.581	.61058	32.875	26.448	.179	1440.7
110.0	-1.563	.61121	32.888	26.458	.187	1440.9
115.0	-1.552	.61172	32.904	26.470	.194	1441.0

SITE L2   EXPERIMENT 4166

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
120.0	-1.604	.61095	32.912	26.478	.202	1440.9
125.0	-1.613	.61097	32.920	26.485	.210	1440.9
130.0	-1.627	.61085	32.926	26.491	.217	1440.9
135.0	-1.611	.61131	32.932	26.495	.225	1441.1
140.0	-1.626	.61122	32.940	26.502	.233	1441.1
145.0	-1.586	.61220	32.951	26.510	.240	1441.4
150.0	-1.620	.61181	32.963	26.520	.246	1441.4
155.0	-1.517	.61399	32.975	26.527	.255	1441.9
160.0	-1.473	.61518	32.993	26.541	.262	1442.3
165.0	-1.503	.61501	33.014	26.559	.270	1442.2
170.0	-1.458	.61633	33.038	26.577	.277	1442.6
175.0	-1.447	.61705	33.066	26.599	.284	1442.7
180.0	-1.434	.61799	33.103	26.629	.291	1442.9
185.0	-1.427	.61854	33.125	26.647	.298	1443.1
190.0	-1.441	.61898	33.164	26.679	.305	1443.1
195.0	-1.445	.61927	33.181	26.693	.311	1443.2
200.0	-1.430	.62036	33.227	26.730	.318	1443.5
210.0	-1.403	.62169	33.269	26.763	.331	1443.8
220.0	-1.306	.62519	33.361	26.835	.343	1444.6
230.0	-1.256	.62826	33.479	26.929	.354	1445.1
240.0	-1.232	.62970	33.531	26.971	.365	1445.5
250.0	-1.134	.63342	33.633	27.050	.375	1446.2
260.0	-1.122	.63447	33.675	27.084	.385	1446.5
270.0	-1.051	.63674	33.722	27.120	.395	1447.1
280.0	-1.070	.63711	33.760	27.151	.404	1447.2
290.0	-.871	.64184	33.805	27.180	.412	1448.4
300.0	-.820	.64339	33.832	27.200	.421	1448.8
307.5	-.796	.64415	33.845	27.209	.427	1449.1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DATE 05/04/82 GMT 2114
STN L2
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-2
+ = SURFACE FREEZING POINT
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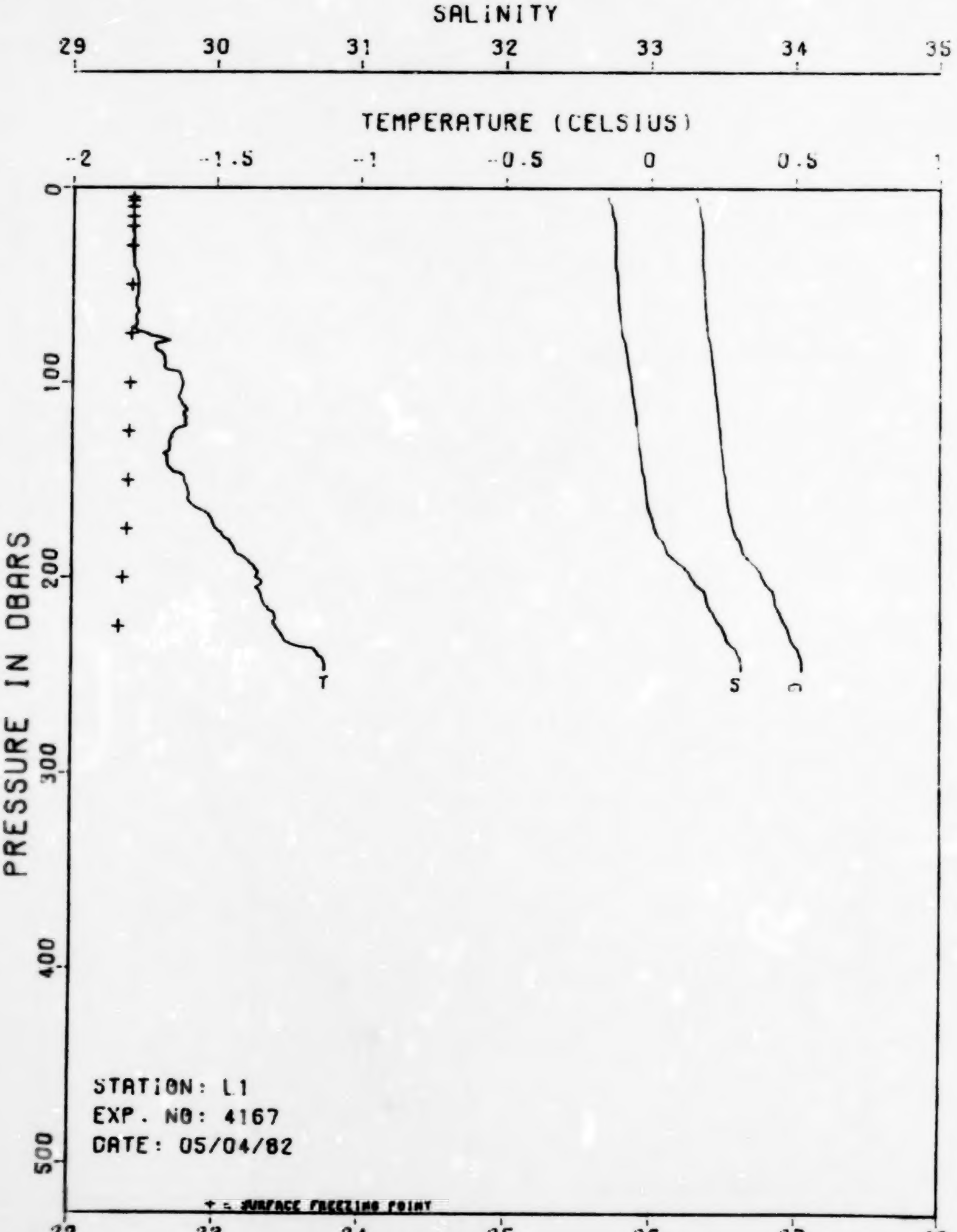
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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-1.5
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-0.5
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PRESSURE IN DBARS
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STATION: L1
EXP. NO: 4167
DATE: 05/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE L1 EXPERIMENT 4167

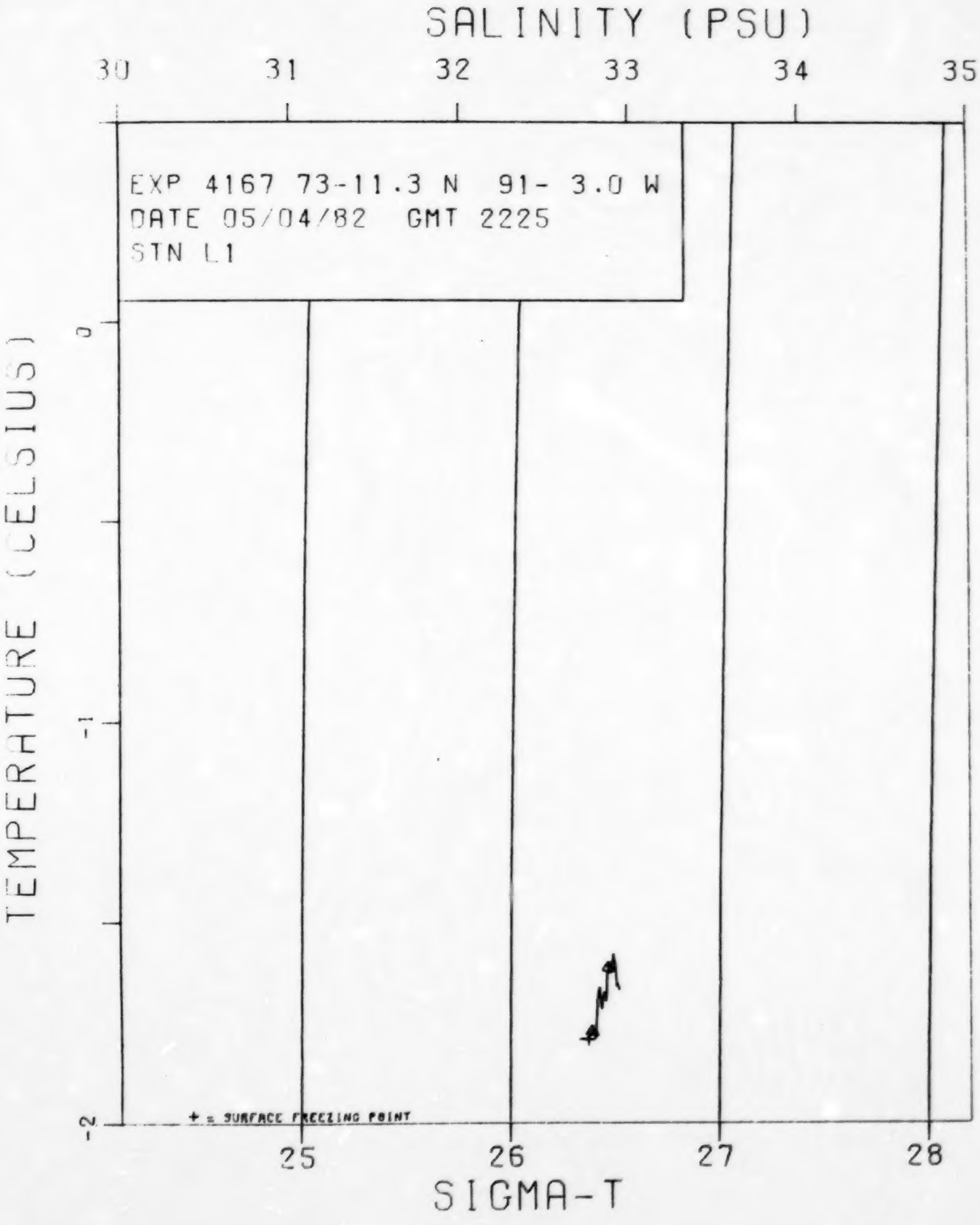
LAT.N. 73-11-17 LON.W. 91- 3- 0 DATE 5/ 4/82 G.M.T. 2225

ICE THICKNESS 1.0 M WATER DEPTH 249 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.9	-1.795	.60265	32.701	26.312	.008	1437.8
5.0	-1.794	.60264	32.700	26.311	.008	1437.8
6.0	-1.793	.60269	32.701	26.312	.010	1437.8
7.0	-1.794	.60283	32.709	26.318	.012	1437.8
8.0	-1.793	.60289	32.711	26.320	.014	1437.9
9.0	-1.793	.60317	32.727	26.333	.015	1437.9
10.0	-1.792	.60321	32.728	26.334	.017	1437.9
11.0	-1.792	.60320	32.727	26.333	.019	1437.9
12.0	-1.792	.60323	32.728	26.334	.020	1438.0
13.0	-1.792	.60328	32.731	26.336	.022	1438.0
14.0	-1.791	.60334	32.733	26.337	.024	1438.0
15.0	-1.793	.60332	32.732	26.337	.025	1438.0
16.0	-1.791	.60352	32.742	26.345	.027	1438.0
17.0	-1.791	.60365	32.749	26.350	.029	1438.1
18.0	-1.791	.60367	32.749	26.351	.030	1438.1
19.0	-1.791	.60370	32.750	26.352	.032	1438.1
20.0	-1.790	.60372	32.750	26.352	.034	1438.1
21.0	-1.790	.60376	32.752	26.353	.035	1438.1
22.0	-1.790	.60378	32.753	26.354	.037	1438.2
23.0	-1.790	.60378	32.752	26.353	.039	1438.2
24.0	-1.790	.60379	32.752	26.353	.040	1438.2
25.0	-1.790	.60381	32.752	26.353	.042	1438.2
27.5	-1.789	.60384	32.751	26.352	.046	1438.3
30.0	-1.789	.60388	32.752	26.353	.050	1438.3
32.5	-1.790	.60390	32.754	26.354	.054	1438.3
35.0	-1.789	.60393	32.752	26.353	.059	1438.4
37.5	-1.790	.60396	32.753	26.354	.063	1438.4
40.0	-1.788	.60401	32.753	26.354	.067	1438.5
42.5	-1.781	.60428	32.760	26.359	.071	1438.5
45.0	-1.776	.60453	32.768	26.365	.075	1438.6
47.5	-1.774	.60463	32.770	26.367	.079	1438.7
50.0	-1.774	.60468	32.771	26.368	.083	1438.7
55.0	-1.774	.60475	32.773	26.369	.092	1438.8
60.0	-1.780	.60477	32.776	26.372	.100	1438.9
65.0	-1.773	.60510	32.785	26.380	.108	1439.0
70.0	-1.777	.60520	32.793	26.386	.116	1439.1
75.0	-1.743	.60597	32.798	26.390	.124	1439.3
80.0	-1.707	.60710	32.822	26.408	.132	1439.6
85.0	-1.689	.60767	32.833	26.417	.140	1439.8
90.0	-1.678	.60807	32.842	26.423	.148	1439.9
95.0	-1.625	.60932	32.854	26.432	.156	1440.3
100.0	-1.615	.60972	32.864	26.440	.164	1440.4
105.0	-1.627	.60970	32.872	26.447	.172	1440.5
110.0	-1.619	.61007	32.883	26.456	.180	1440.6

SITE L1 EXPERIMENT 4167

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.605	.61057	32.894	26.464	.187	1440.8
120.0	-1.609	.61068	32.903	26.471	.195	1440.8
125.0	-1.649	.61015	32.912	26.480	.203	1440.7
130.0	-1.665	.61002	32.918	26.485	.210	1440.8
135.0	-1.664	.61025	32.928	26.493	.218	1440.9
140.0	-1.671	.61029	32.934	26.498	.226	1440.9
145.0	-1.652	.61081	32.942	26.504	.233	1441.1
150.0	-1.611	.61192	32.960	26.518	.241	1441.4
155.0	-1.599	.61232	32.966	26.522	.248	1441.5
160.0	-1.599	.61248	32.972	26.528	.255	1441.6
165.0	-1.556	.61357	32.987	26.538	.263	1441.9
170.0	-1.514	.61487	33.014	26.559	.270	1442.3
175.0	-1.495	.61556	33.031	26.573	.277	1442.5
180.0	-1.466	.61686	33.072	26.605	.285	1442.7
185.0	-1.435	.61808	33.107	26.633	.292	1443.0
190.0	-1.398	.61971	33.158	26.673	.298	1443.3
195.0	-1.364	.62178	33.239	26.738	.305	1443.7
200.0	-1.360	.62264	33.283	26.773	.311	1443.9
210.0	-1.342	.62478	33.384	26.854	.323	1444.2
220.0	-1.294	.62682	33.444	26.902	.335	1444.7
230.0	-1.268	.62876	33.522	26.964	.346	1445.1
240.0	-1.144	.63268	33.606	27.029	.356	1446.0
247.7	-1.123	.63353	33.628	27.046	.364	1446.2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35
EXP 4167 73-11.3 N 91- 3.0 W
DATE 05/04/82 GMT 2225
STN L1
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
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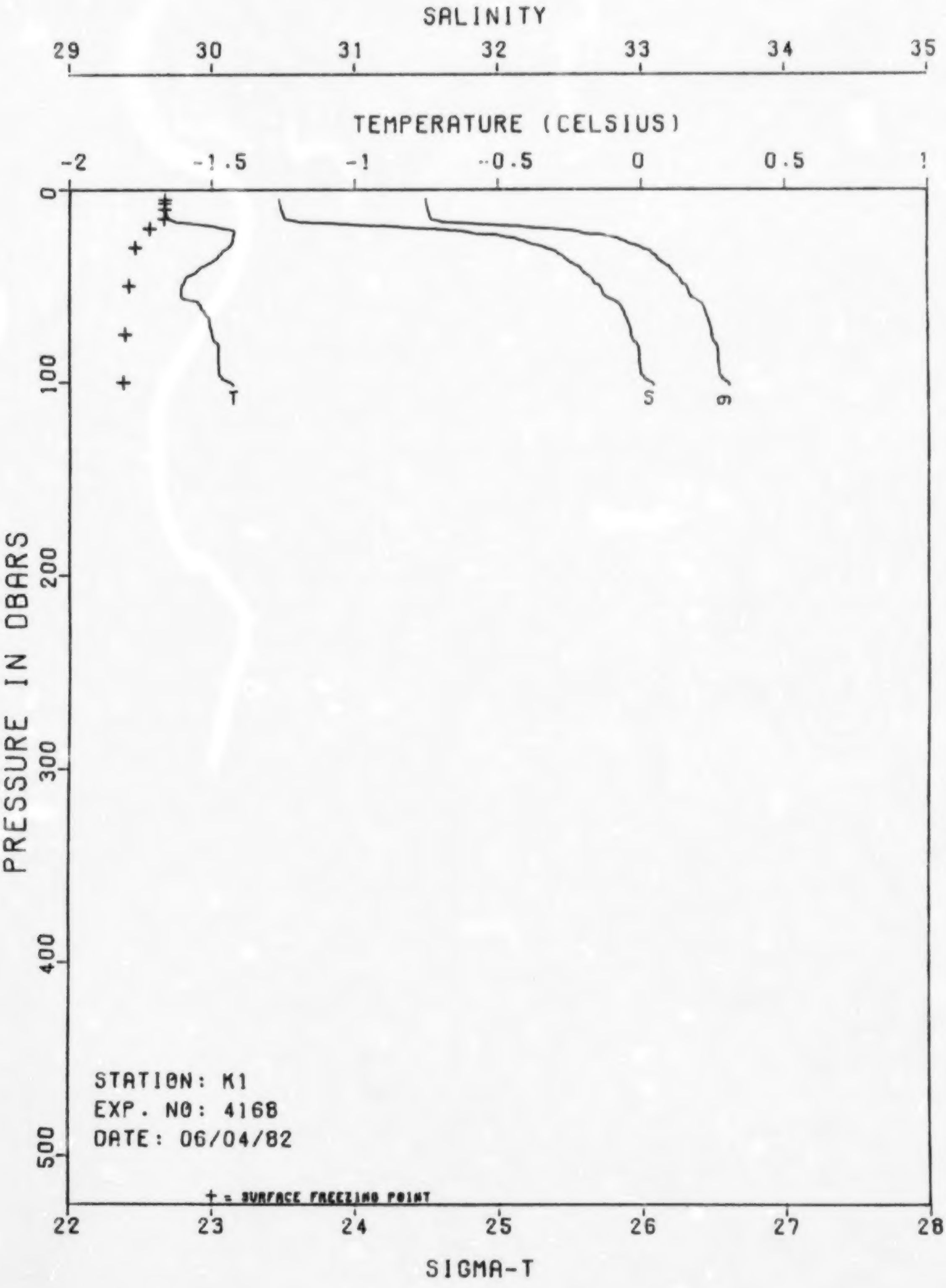
SIGMA-T


SALINITY
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TEMPERATURE (CELSIUS)
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PRESSURE IN DBARS
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STATION: K1
EXP. NO: 4168
DATE: 06/04/82
+ = SURFACE FREEZING POINT
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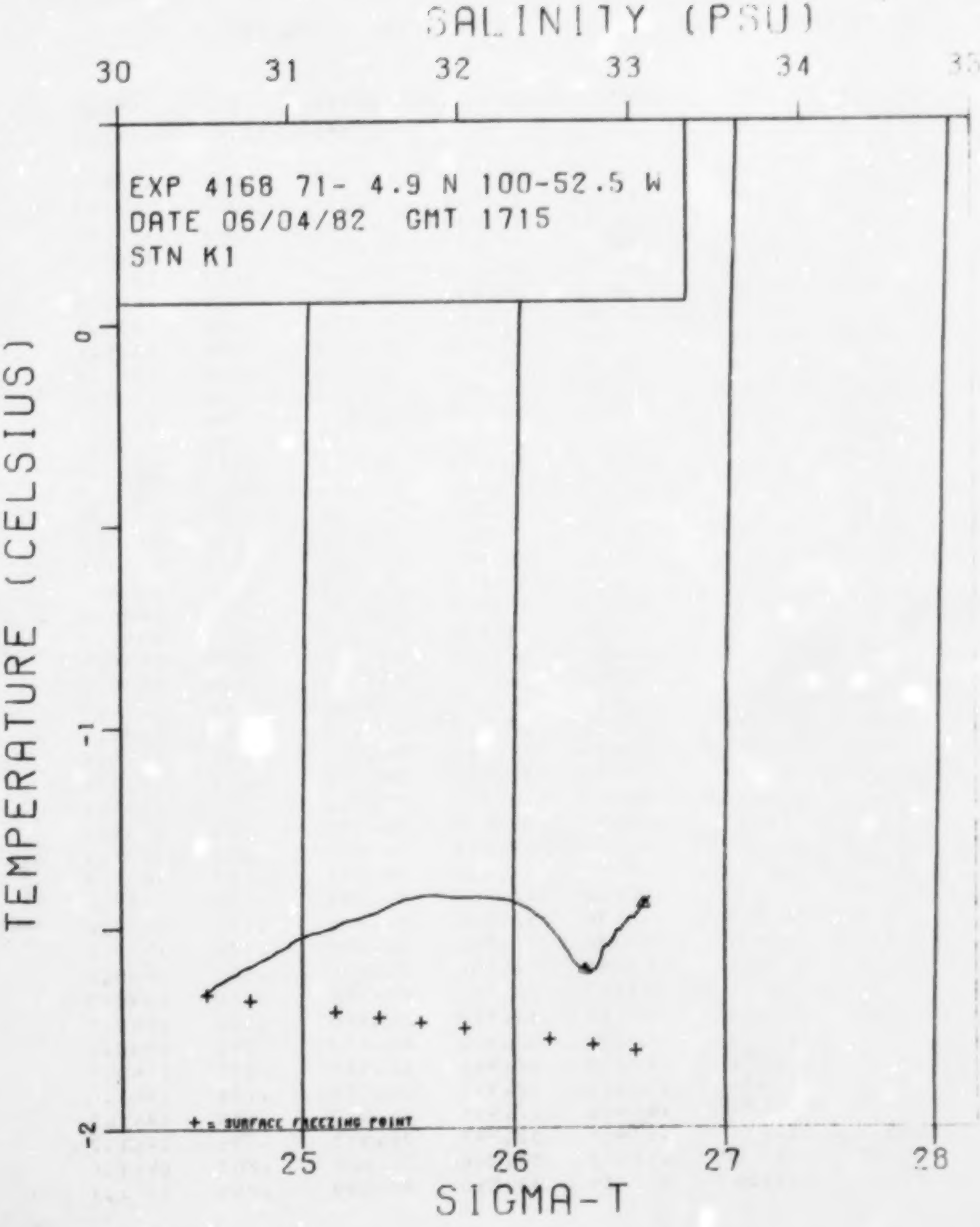
SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE K1 EXPERIMENT 4168

LAT.N. 71- 4-53 LON.W. 100-52-30 DATE 6/ 4/82 G.M.T. 1715

ICE THICKNESS 1.5 M WATER DEPTH 106 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.8	-1.663	.56742	30.472	24.498	.016	1435.3
5.0	-1.664	.56739	30.471	24.497	.017	1435.3
6.0	-1.663	.56743	30.472	24.498	.021	1435.3
7.0	-1.663	.56752	30.477	24.502	.024	1435.3
8.0	-1.663	.56756	30.479	24.504	.027	1435.3
9.0	-1.662	.56763	30.482	24.506	.031	1435.4
10.0	-1.663	.56763	30.482	24.506	.034	1435.4
11.0	-1.662	.56780	30.491	24.513	.038	1435.4
12.0	-1.661	.56790	30.494	24.516	.041	1435.4
13.0	-1.659	.56807	30.503	24.523	.044	1435.5
14.0	-1.657	.56817	30.505	24.525	.048	1435.5
15.0	-1.655	.56834	30.513	24.531	.051	1435.5
16.0	-1.642	.56915	30.546	24.558	.055	1435.7
17.0	-1.618	.57138	30.652	24.644	.058	1435.9
18.0	-1.558	.57677	30.907	24.850	.061	1436.6
19.0	-1.506	.58235	31.180	25.070	.064	1437.2
20.0	-1.470	.58716	31.424	25.268	.067	1437.8
21.0	-1.429	.59183	31.655	25.454	.069	1438.3
22.0	-1.420	.59422	31.785	25.559	.072	1438.6
23.0	-1.419	.59505	31.832	25.597	.074	1438.6
24.0	-1.424	.59813	32.018	25.748	.077	1438.9
25.0	-1.424	.59912	32.075	25.795	.079	1439.0
27.5	-1.429	.60126	32.205	25.900	.084	1439.2
30.0	-1.441	.60300	32.319	25.993	.089	1439.3
32.5	-1.465	.60420	32.414	26.071	.094	1439.4
35.0	-1.479	.60473	32.459	26.108	.099	1439.4
37.5	-1.497	.60507	32.498	26.140	.104	1439.4
40.0	-1.529	.60555	32.559	26.190	.108	1439.4
42.5	-1.553	.60574	32.595	26.220	.113	1439.4
45.0	-1.580	.60588	32.632	26.251	.117	1439.4
47.5	-1.597	.60622	32.669	26.281	.122	1439.4
50.0	-1.607	.60676	32.711	26.316	.126	1439.4
55.0	-1.607	.60730	32.740	26.339	.134	1439.6
60.0	-1.538	.61059	32.856	26.431	.142	1440.1
65.0	-1.522	.61147	32.886	26.455	.150	1440.3
70.0	-1.508	.61230	32.917	26.480	.158	1440.5
75.0	-1.500	.61276	32.932	26.492	.166	1440.7
80.0	-1.481	.61373	32.965	26.519	.173	1440.9
85.0	-1.476	.61426	32.990	26.539	.181	1441.0
90.0	-1.479	.61431	32.991	26.540	.188	1441.1
95.0	-1.475	.61456	32.998	26.545	.195	1441.2
100.0	-1.435	.61653	33.068	26.601	.203	1441.6
101.8	-1.424	.61714	33.090	26.619	.205	1441.7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31
32
33
34
35
EXP 4168 71- 4.9 N 100-52.5 W
DATE 06/04/82 GMT 1715
STN K1
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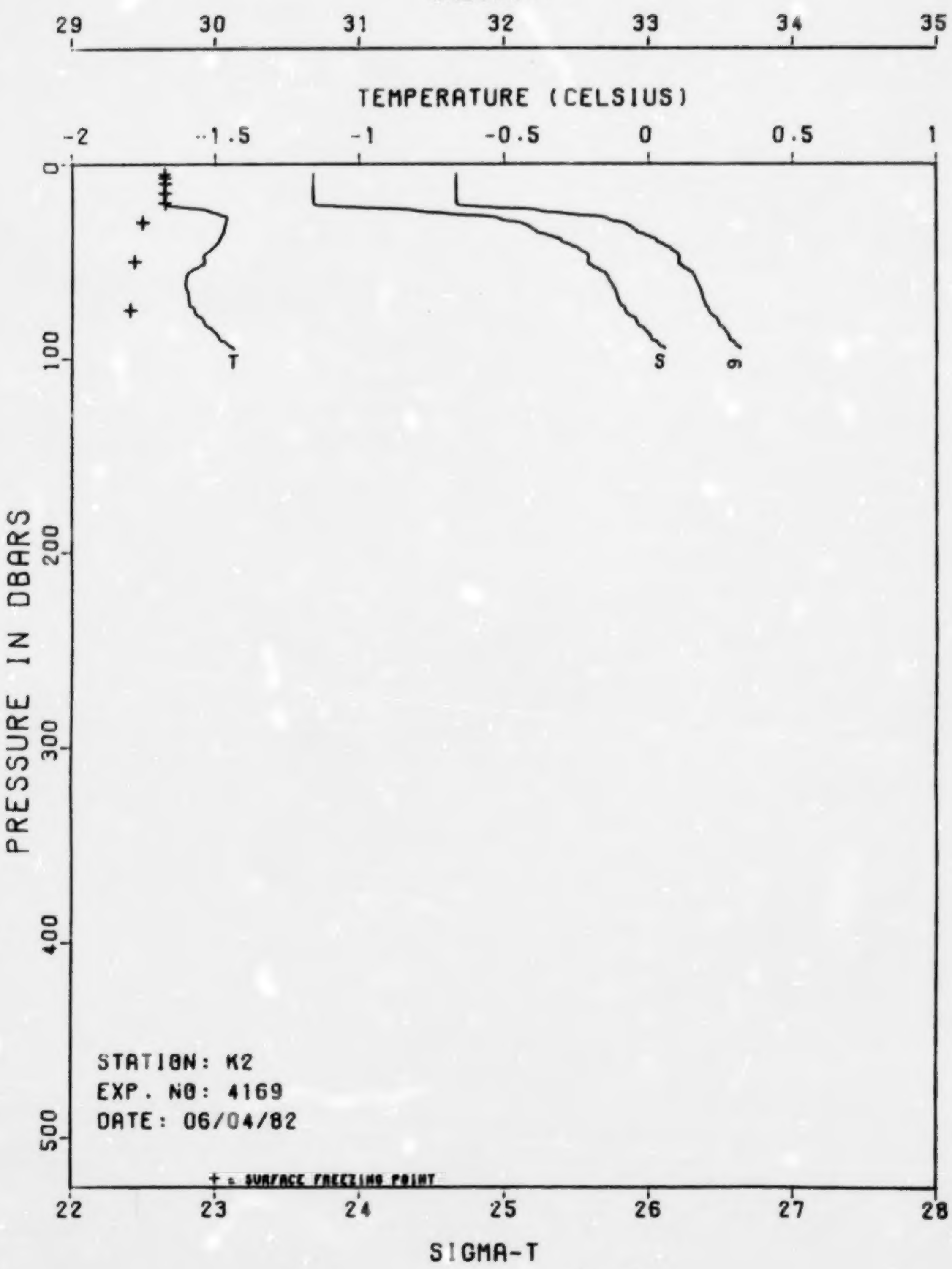
-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T


SALINITY
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30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
300
400
500
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S
σ
STATION: K2
EXP. NO: 4169
DATE: 06/04/82
+ = SURFACE FREEZING POINT
22
23
24
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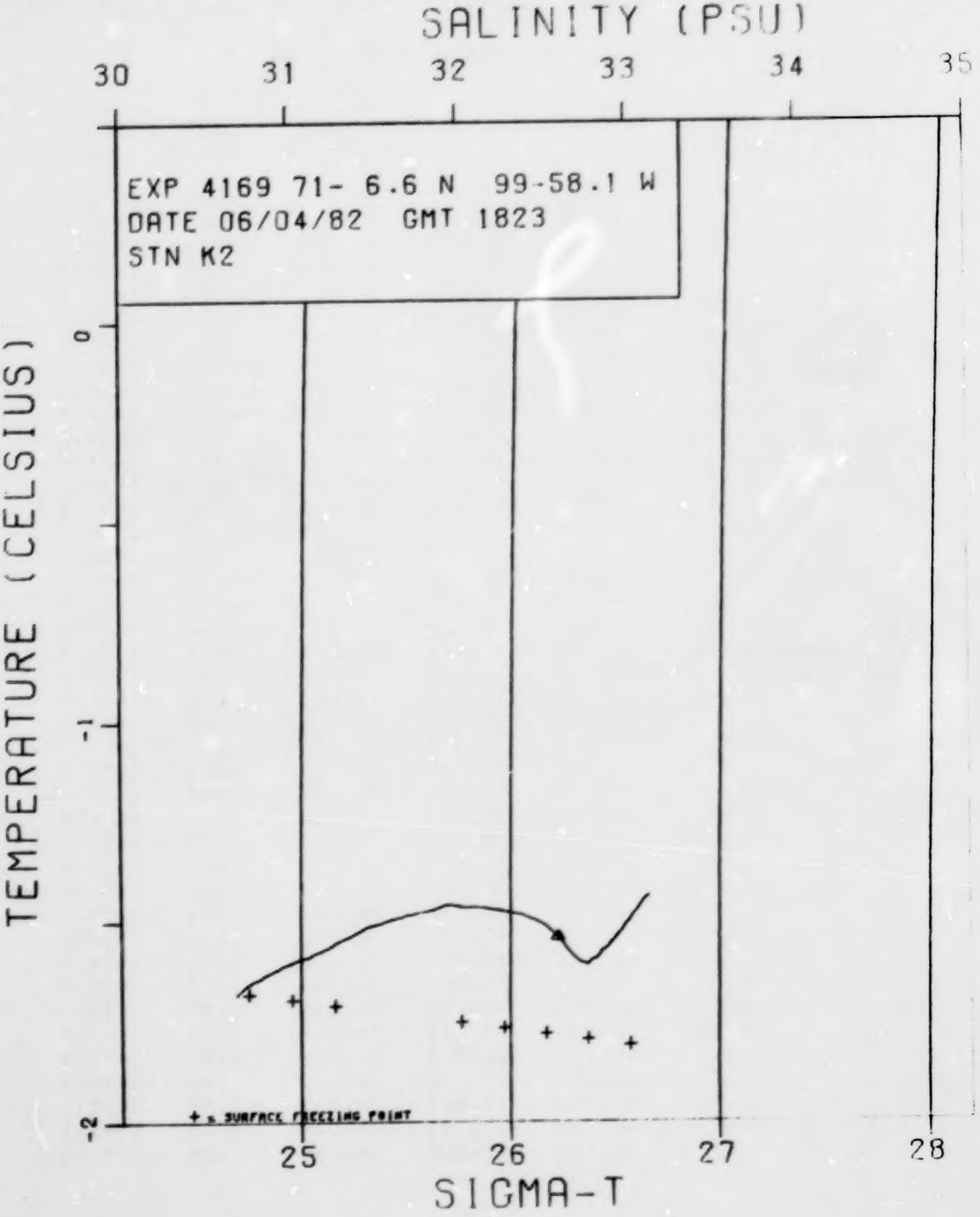
SIGMA-T

CRUISE 015-82-022   ARCTIC ISLANDS-82   SITE K2   EXPERIMENT 4169

LAT.N. 71- 6-36   LON.W. 99-58- 5   DATE 6/ 4/82   G.M.T. 1823

ICE THICKNESS 1.6 M   WATER DEPTH 98 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
5.0	-1.681	.57060	30.679	24.666	.016	1435.5
6.0	-1.680	.57061	30.677	24.665	.020	1435.5
7.0	-1.680	.57061	30.677	24.665	.023	1435.5
8.0	-1.680	.57062	30.677	24.665	.026	1435.5
9.0	-1.680	.57063	30.676	24.664	.029	1435.6
10.0	-1.680	.57064	30.676	24.664	.033	1435.6
11.0	-1.679	.57065	30.676	24.664	.036	1435.6
12.0	-1.679	.57066	30.676	24.664	.039	1435.6
13.0	-1.679	.57067	30.676	24.664	.042	1435.6
14.0	-1.680	.57068	30.677	24.665	.046	1435.6
15.0	-1.680	.57069	30.677	24.664	.049	1435.7
16.0	-1.680	.57069	30.676	24.664	.052	1435.7
17.0	-1.680	.57071	30.677	24.664	.056	1435.7
18.0	-1.679	.57073	30.676	24.664	.059	1435.7
19.0	-1.680	.57073	30.677	24.665	.062	1435.7
20.0	-1.678	.57079	30.678	24.665	.065	1435.7
21.0	-1.679	.57087	30.682	24.669	.069	1435.8
22.0	-1.625	.57523	30.883	24.831	.072	1436.3
23.0	-1.555	.58282	31.256	25.133	.075	1437.2
24.0	-1.528	.58555	31.368	25.239	.077	1437.5
25.0	-1.506	.58781	31.499	25.329	.080	1437.8
27.5	-1.460	.59626	31.944	25.689	.086	1438.7
30.0	-1.466	.59848	32.079	25.799	.092	1438.9
32.5	-1.472	.60006	32.178	25.879	.097	1439.0
35.0	-1.473	.60085	32.224	25.917	.103	1439.1
37.5	-1.482	.60248	32.328	26.002	.108	1439.3
40.0	-1.490	.60341	32.390	26.052	.112	1439.4
42.5	-1.505	.60449	32.469	26.117	.117	1439.5
45.0	-1.525	.60525	32.534	26.170	.122	1439.5
47.5	-1.544	.60569	32.579	26.207	.126	1439.5
50.0	-1.540	.60570	32.574	26.203	.131	1439.6
55.0	-1.585	.60634	32.658	26.272	.140	1439.5
60.0	-1.606	.60710	32.723	26.325	.148	1439.6
65.0	-1.601	.60797	32.766	26.360	.157	1439.8
70.0	-1.595	.60847	32.786	26.376	.165	1439.9
75.0	-1.574	.60974	32.835	26.416	.173	1440.2
80.0	-1.544	.61156	32.908	26.474	.181	1440.5
85.0	-1.513	.61326	32.970	26.523	.188	1440.8
90.0	-1.488	.61457	33.017	26.561	.196	1441.1
95.0	-1.439	.61716	33.112	26.637	.203	1441.5
95.5	-1.437	.61717	33.111	26.636	.204	1441.5


SALINITY (PSU)
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32
33
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35
EXP 4169 71- 6.6 N 99-58.1 W
DATE 06/04/82 GMT 1823
STN K2
TEMPERATURE (CELSIUS)
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-2
+ = SURFACE FREEZING POINT
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26
27
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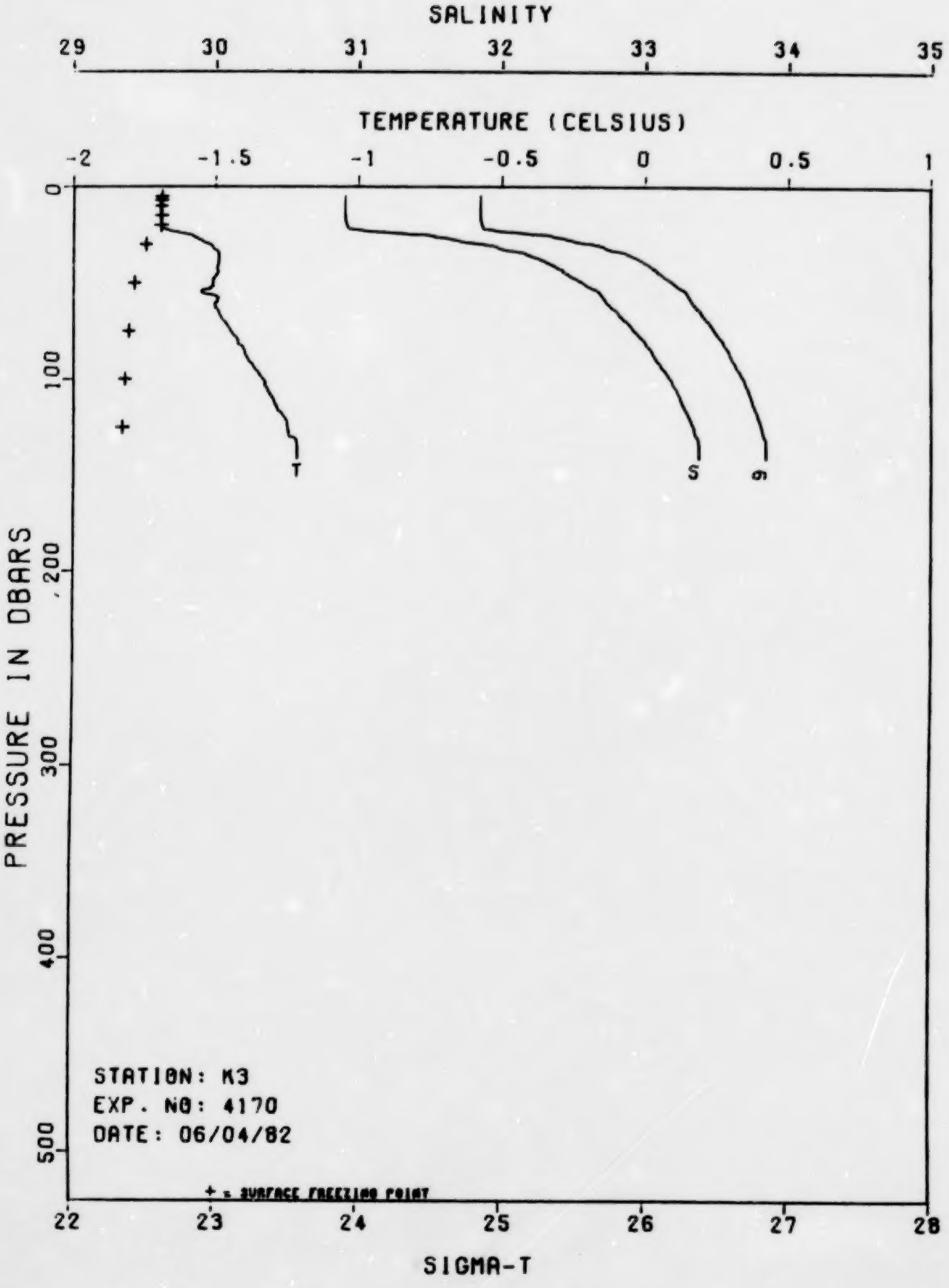
SIGMA-T


SALINITY
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30
31
32
33
34
35
TEMPERATURE (CELSIUS)
-2
-1.5
-1
-0.5
0
0.5
1
PRESSURE IN DBARS
0
100
200
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500
T
S
σ
STATION: K3
EXP. NO: 4170
DATE: 06/04/82
+ = SURFACE FREEZING POINT
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SIGMA-T

CRUISE 015-82-022 ARCTIC ISLANDS-82 SITE K3 EXPERIMENT 4170

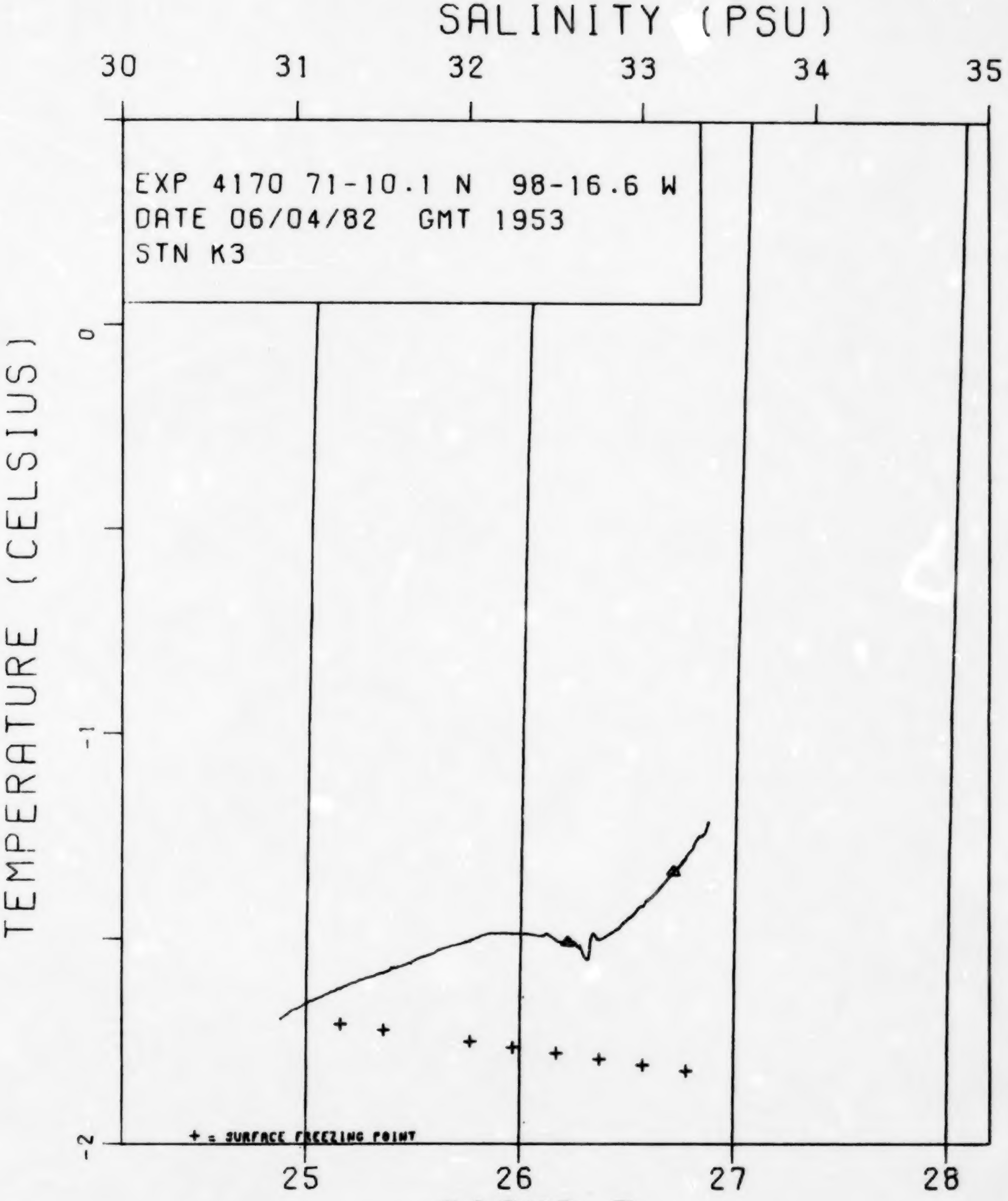
LAT.N. 71-10- 6 LON.W. 98-16-35 DATE 6/ 4/82 G.M.T. 1953

ICE THICKNESS 1.8 M WATER DEPTH 146 M

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
4.8	-1.696	.57419	30.906	24.851	.015	1435.7
5.0	-1.695	.57420	30.906	24.851	.015	1435.7
6.0	-1.696	.57421	30.906	24.851	.019	1435.8
7.0	-1.695	.57422	30.906	24.851	.022	1435.8
8.0	-1.694	.57421	30.903	24.849	.025	1435.8
9.0	-1.696	.57423	30.905	24.851	.028	1435.8
10.0	-1.695	.57423	30.905	24.850	.031	1435.8
11.0	-1.694	.57423	30.903	24.848	.034	1435.8
12.0	-1.695	.57426	30.905	24.850	.037	1435.9
13.0	-1.694	.57426	30.904	24.849	.040	1435.9
14.0	-1.695	.57428	30.904	24.850	.043	1435.9
15.0	-1.694	.57431	30.905	24.850	.046	1435.9
16.0	-1.694	.57435	30.907	24.852	.049	1435.9
17.0	-1.694	.57437	30.907	24.852	.053	1435.9
18.0	-1.693	.57444	30.910	24.854	.056	1436.0
19.0	-1.692	.57454	30.914	24.858	.059	1436.0
20.0	-1.692	.57465	30.919	24.862	.062	1436.0
21.0	-1.690	.57478	30.925	24.867	.065	1436.0
22.0	-1.685	.57507	30.937	24.876	.068	1436.1
23.0	-1.657	.57762	31.057	24.973	.071	1436.4
24.0	-1.624	.58116	31.231	25.114	.074	1436.8
25.0	-1.586	.58586	31.467	25.305	.077	1437.4
27.5	-1.559	.58960	31.657	25.458	.083	1437.8
30.0	-1.519	.59404	31.875	25.635	.089	1438.3
32.5	-1.502	.59659	32.006	25.740	.095	1438.6
35.0	-1.487	.59970	32.171	25.874	.100	1439.0
37.5	-1.486	.60123	32.261	25.947	.105	1439.2
40.0	-1.489	.60242	32.331	26.004	.110	1439.3
42.5	-1.494	.60347	32.397	26.058	.115	1439.4
45.0	-1.486	.60445	32.446	26.098	.120	1439.5
47.5	-1.506	.60514	32.506	26.146	.125	1439.6
50.0	-1.508	.60619	32.569	26.198	.129	1439.7
55.0	-1.552	.60743	32.687	26.294	.138	1439.7
60.0	-1.494	.60926	32.729	26.327	.147	1440.2
65.0	-1.488	.61076	32.807	26.390	.155	1440.4
70.0	-1.466	.61230	32.873	26.444	.163	1440.6
75.0	-1.447	.61366	32.927	26.486	.171	1440.9
80.0	-1.419	.61544	32.998	26.544	.178	1441.2
85.0	-1.398	.61672	33.047	26.583	.186	1441.5
90.0	-1.386	.61755	33.079	26.609	.193	1441.6
95.0	-1.360	.61895	33.130	26.649	.200	1441.9
100.0	-1.333	.62037	33.181	26.690	.206	1442.2
105.0	-1.318	.62137	33.220	26.721	.213	1442.4
110.0	-1.298	.62231	33.250	26.745	.220	1442.6

SITE K3 EXPERIMENT 4170

PRESSURE (DBARS)	TEMP (DEG.C)	COND. R	SALINITY	SIGMAT (KG/M**3)	DHA (DYN.M)	SOUND (M/S)
115.0	-1.284	.62312	33.279	26.767	.226	1442.8
120.0	-1.257	.62423	33.312	26.793	.232	1443.1
125.0	-1.248	.62500	33.343	26.819	.238	1443.2
130.0	-1.241	.62543	33.358	26.831	.244	1443.4
135.0	-1.214	.62638	33.380	26.848	.250	1443.6
140.0	-1.213	.62647	33.381	26.848	.256	1443.7
141.7	-1.213	.62648	33.381	26.848	.258	1443.7


SALINITY (PSU)
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33
34
35
EXP 4170 71-10.1 N 98-16.6 W
DATE 06/04/82 GMT 1953
STN K3
TEMPERATURE (CELSIUS)
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-1
-2
+ = SURFACE FREEZING POINT
25
26
27
28
SIGMA-T

APPENDIX 3

NUTRIENT DATA LISTINGS

Nutrient concentrations were in most cases determined in triplicate at each sampled level. To choose the "best" value for nutrient concentration shown in Table A3-1 the following procedure was used:

1. For each nutrient, the root-mean-square deviation from 1.0 of ratios to the median at each sampled level was determined.

2. Ratios at each sampled level were compared to the root-mean-square deviation σ, and the corresponding nutrient concentrations were discarded if the difference of the ratio from 1.0 exceeded 1.25 σ.

3. Remaining nutrient concentration values were averaged at each sampled level.

For this data set, the root-mean-square deviations, expressed as percentages, were:

Silicate	9.3%
Nitrate	5.4%
Phosphate	11.4%

A complete set of measurements are given in Table A3-2.

Table A3-1

EXP #	STN	DEPTH M	LEVEL DB	TEMP C	SALINITY PSS78	SILICATE MMOL PER CUBIC METRE	NITRATE MMOL PER CUBIC METRE	PHOSPHATE MMOL PER CUBIC METRE
4103	N2	411.	5.	-1.80	32.83	9.2	4.9	1.34
			50.	-1.77	32.95	17.7	8.8	
4106	N5	436.	5.	-1.76	32.27	8.2	4.0	1.27
			50.	-1.77	32.70	18.1	9.3	1.38
4109	A2	122.	5.	-1.71	32.90	10.1	6.0	1.21
4112	B1	478.	5.	-1.77	32.28	16.3	6.9	1.32
4115	B4	328.	5.	-1.75	31.92	17.4	6.3	1.43
			50.	-1.64	32.46	23.1	10.1	1.74
4118	C1	126.	5.	-1.78	32.38	18.8	7.9	1.46
			50.	-1.73	32.60	21.3	9.3	1.63
4121	C4	140.	5.	-1.75	31.96	16.9	6.6	1.41
			50.	-1.67	32.59	22.6	10.3	1.66
4123	E1	355.	272.	.02	34.64	29.4	18.8	1.49
4124	E2	416.	5.	-1.77	32.33	12.0	5.0	1.28
			50.	-1.71	32.40	18.7	7.4	1.46
4126	E5	525.	5.	-1.77	32.25	8.8	4.0	1.30
			50.	-1.77	32.27	9.1	4.5	1.32
4155	M2	175.	5.	-1.75	31.84	12.1	4.3	.59
			75.	-1.55	32.87	26.8	12.3	1.95
			147.	-1.17	33.57	37.4	17.8	1.93
4158	M5	288.	5.	-1.73	31.61	10.4	3.4	1.09
			75.	-1.58	32.75	24.2	10.3	1.59
			234.	-.24	34.63	32.7	19.7	1.53
4163	L5	381.	5.	-1.76	32.16	17.0	7.9	1.34
			75.	-1.59	32.42	20.8	9.6	1.32
			225.	-1.09	33.66	27.8	14.0	1.44
4166	L2	308.	5.	-1.78	32.45	15.0	7.3	1.30
			75.	-1.61	32.78	21.3	10.4	1.43
			225.	-1.28	33.43	21.4	11.3	
4169	K2	96.	5.	-1.68	30.63	10.7	3.1	.98
			75.	-1.58	32.84	28.0	9.4	1.65
4129	G4	185.	5.	-1.79	32.53	12.1	6.1	1.39
			75.	-1.73	33.16	25.6	12.5	1.72
4131	G2	455.	330.	.12	34.72	32.8	18.3	1.63
4132	G1	263.	5.	-1.75	31.86	8.5	4.1	
			75.	-1.60	33.01	24.2	12.1	1.78
4134	I5	237.	5.	-1.76	32.03	9.6	4.3	1.25
			75.	-1.69	33.12	25.1	12.6	1.88
4135	I4	394.	432.	.20	34.73	34.1	17.6	1.09
4137	I1	120.	5.	-1.74	31.50	7.3	3.2	1.11
			75.	-1.55	33.16	35.5	14.6	1.92
4138	H1	315.	292.	.04	34.66	32.3	18.5	1.75
4139	H2	472.	5.	-1.75	31.77	7.0	3.6	1.16
			75.	-1.72	33.11	25.1	12.1	2.08
4142	H5	437.	5.	-1.73	31.37	14.3	5.3	1.58
			75.	-1.66	33.08	24.8	12.6	1.75
4146	J4	183.	5.	-1.65	30.07	16.0	5.7	1.73
			75.	-1.70	33.29	28.0	14.0	1.78
4147	J3	335.	330.	.09	34.70	32.6	18.0	1.45
4149	J1	175.	5.	-1.63	29.74	16.3	5.6	1.47
			75.	-1.67	33.12	27.0	13.5	1.78
4150	F4	91.	5.	-1.74	31.58	8.9	3.9	1.26
			75.	-1.56	33.03	30.5	13.5	1.88
4152	F1	104.	5.	-1.74	31.61	8.6	3.8	1.16
			36.	-1.52	32.20	13.0	5.4	1.28
			75.	-1.56	33.05	27.8	14.1	1.78

Table A3-2

Silicate, nitrate and phosphate data from bottle casts taken March 19-April 6, 1982 in the Canadian Arctic Archipelago.

Station No.	Exp. No.	Depth (m)	SIO_3		NO_3		PO_4	
			(1)	(2)	(1)	(2)	(1)	(2)
A2	4109	5	9.0	11.3	4.6	6.0	1.20	1.22
B1	4112	5	16.3	16.3	6.9	7.0	1.48	1.57
B4	4115	5	17.0	17.8	6.3	6.2	1.42	1.44
B4	4115	50	22.2	24.0	9.8	10.4	1.68	1.80
C1	4118	5	18.9	18.7	7.8	7.9	1.48	1.44
C1	4118	50	21.2	21.5	9.2	9.4	1.62	1.63
C4	4121	5	16.9	—	6.5	6.6	1.36	1.45
C4	4121	50	23.3	21.9	10.1	10.4	1.65	1.67
E1*	4123	272	31.9	26.9	18.7	18.8	1.32	1.66
E2*	4124	5	12.0	12.1	4.9	5.1	1.28	1.29
E2*	4124	50	17.8	19.5	6.8	8.0	1.30	1.62
E5*	4126	5	16.0	8.8	4.0	4.0	1.30	3.86
E5	4126	50	9.1	11.9	4.5	3.8	1.97	1.32
F1	4152	5	8.4	8.8	3.9	3.8	1.15	1.16
F1	4152	36	12.9	13.2	5.3	5.6	1.26	1.30
F1	4152	75	27.8	27.9	13.9	14.3	1.80	1.77
F4	4150	5	9.3	8.5	4.0	3.8	1.23	1.29
F4	4150	75	30.6	30.4	13.2	13.7	1.86	1.89
G1*	4132	5	8.2	8.7	4.1	4.1	1.99	2.65
G1*	4132	75	23.6	24.7	12.2	12.1	1.78	—
G2*	4131	330	32.2	33.4	18.4	18.3	1.80	1.47
G4*	4129	5	12.6	11.7	6.1	6.0	1.40	1.38
G4	4129	75	26.3	24.9	12.7	12.2	1.69	1.76
H1	4138	292	31.2	33.3	18.1	19.0	1.75	1.76
H2	4139	5	7.0	7.0	3.6	3.6	1.17	1.15
H2*	4139	75	23.9	26.3	12.2	12.1	1.98	2.19
H5*	4142	5	13.2	15.4	5.2	5.4	1.64	1.51
H5*	4142	75	25.1	24.4	12.7	12.6	1.76	1.75
I1*	4137	5	7.4	7.2	3.2	3.2	1.04	1.19
I1*	4137	75	39.4	31.6	14.5	14.7	1.92	—
I5*	4133	5	8.8	10.4	4.2	4.3	1.25	--
I5*	4134	75	25.9	24.3	12.6	12.7	1.90	1.86
I6*	4135	432	34.7	33.5	17.7	17.5	1.09	0.75
J1	4149	5	16.0	16.6	5.7	5.6	1.34	1.60
J1	4149	75	27.3	26.8	13.5	13.5	1.76	1.81
J3	4147	330	32.4	32.8	17.9	18.2	1.45	1.46
J4*	4146	5	16.2	15.7	5.8	5.6	1.63	1.83
J4*	4146	75	28.2	27.7	13.5	14.5	1.78	1.78
K2*	4169	5	11.5	9.9	3.1	3.1	1.06	0.91
K2*	4169	75	29.8	26.3	8.7	10.1	1.65	—
L2	4166	5	14.8	15.2	7.2	7.3	1.30	1.29
L2	4166	75	21.5	21.2	10.3	10.4	1.44	1.42
L2	4166	225	18.9	23.9	10.4	12.1	—	—
L5	4163	5	17.5	16.6	8.1	7.6	1.34	1.34
L5	4163	75	20.8	20.7	9.6	9.7	1.32	—
L5	4163	225	27.2	28.5	13.7	14.4	1.41	1.48

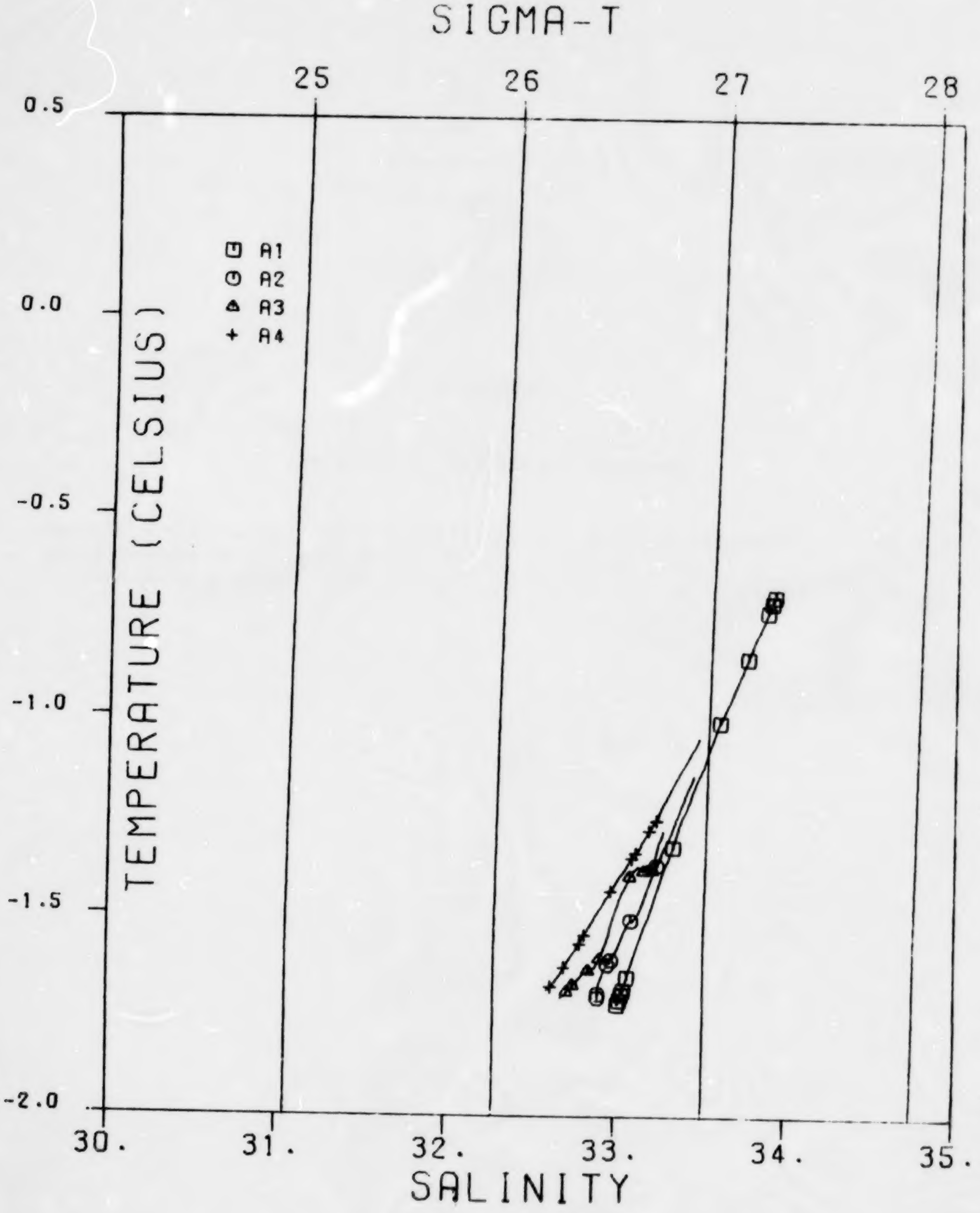
Station No.	Exp. No.	Depth (m)	SIO_3 (1)	SIO_3 (2)	NO_3 (1)	NO_3 (2)	PO_4 (1)	PO_4 (2)
K2*	4169	5	11.5	9.9	3.1	3.1	1.06	0.91
K2*	4169	75	29.8	26.3	8.7	10.1	1.65	--
L2	4166	5	14.8	15.2	7.2	7.3	1.30	1.29
L2	4166	75	21.5	21.2	10.3	10.4	1.44	1.42
L2	4166	225	18.9	23.9	10.4	12.1	--	--
L5	4163	5	17.5	16.6	8.1	7.6	1.34	1.34
L5	4163	75	20.8	20.7	9.6	9.7	1.32	--
L5	4163	225	27.2	28.5	13.7	14.4	1.41	1.48
M2	4155	5	11.8	12.4	4.2	4.3	0.93	1.05
M2	4155	75	26.7	26.9	12.3	12.3	2.22	1.68
M2	4155	147	37.6	37.2	17.8	17.9	1.91	1.96
M5	4158	5	10.1	10.6	3.4	3.4	1.10	1.09
M5	4158	75	23.3	25.0	10.3	10.3	1.55	1.63
M5	4158	234	32.7	32.6	19.7	19.7	1.56	1.51
N2	4103	5	6.0	9.2	3.3	4.9	1.23	1.06
N2	4103	50	18.4	17.0	8.9	8.6	--	--
N5	4106	5	10.8	8.2	5.4	4.0	1.03	1.52
N5	4106	50	17.7	18.5	9.0	9.5	1.31	1.45

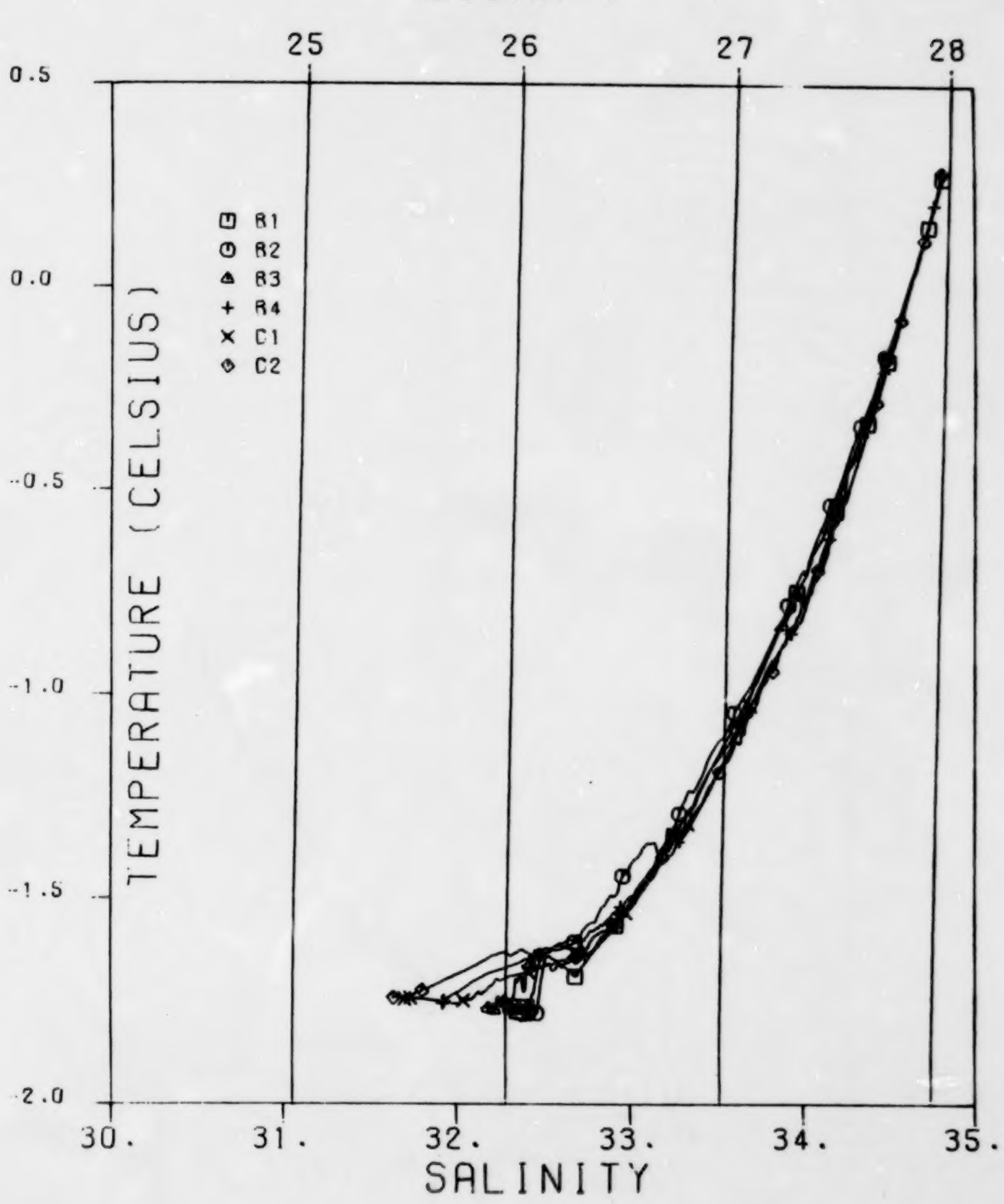
*Samples which thawed prior to analysis.

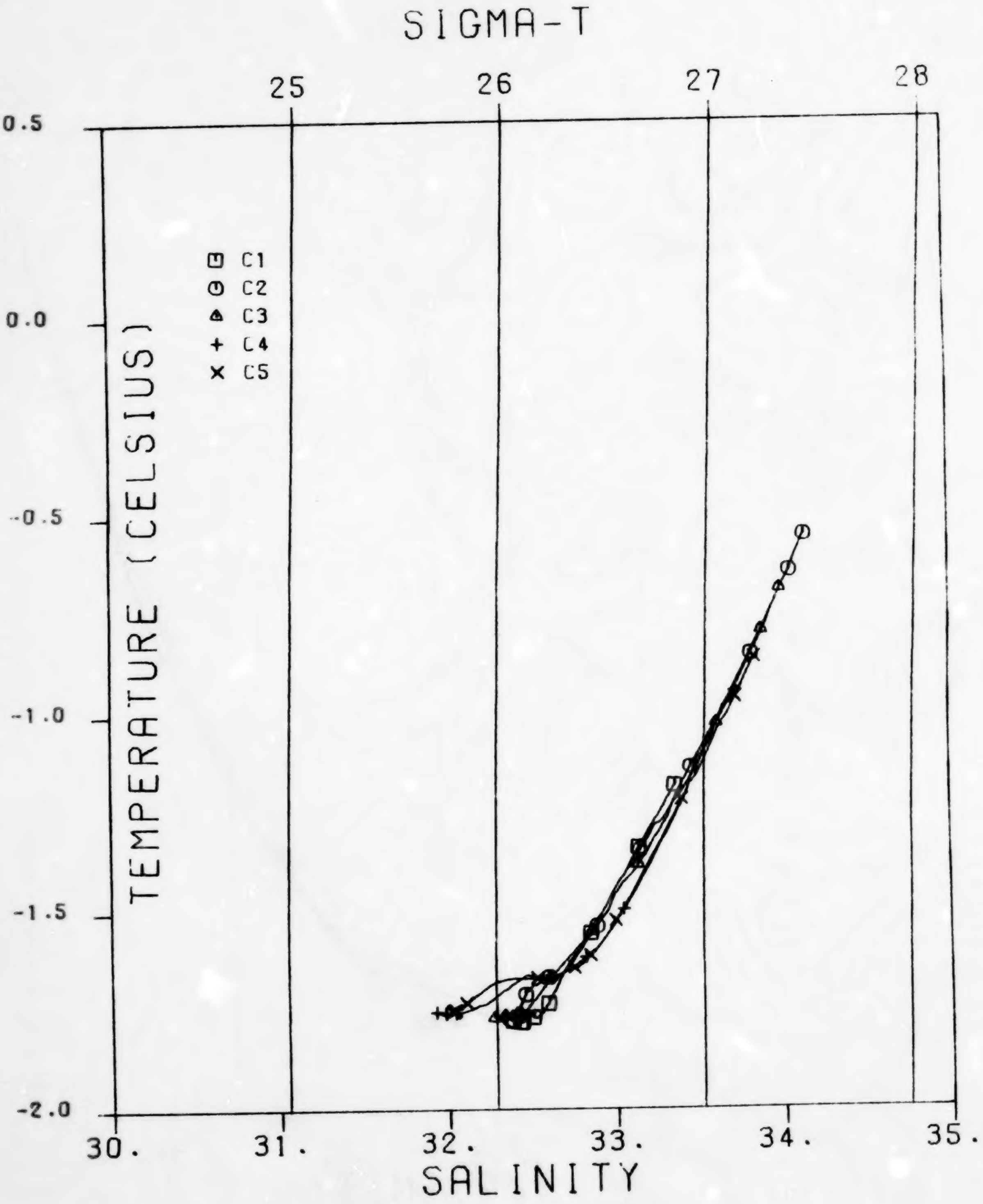
APPENDIX 4

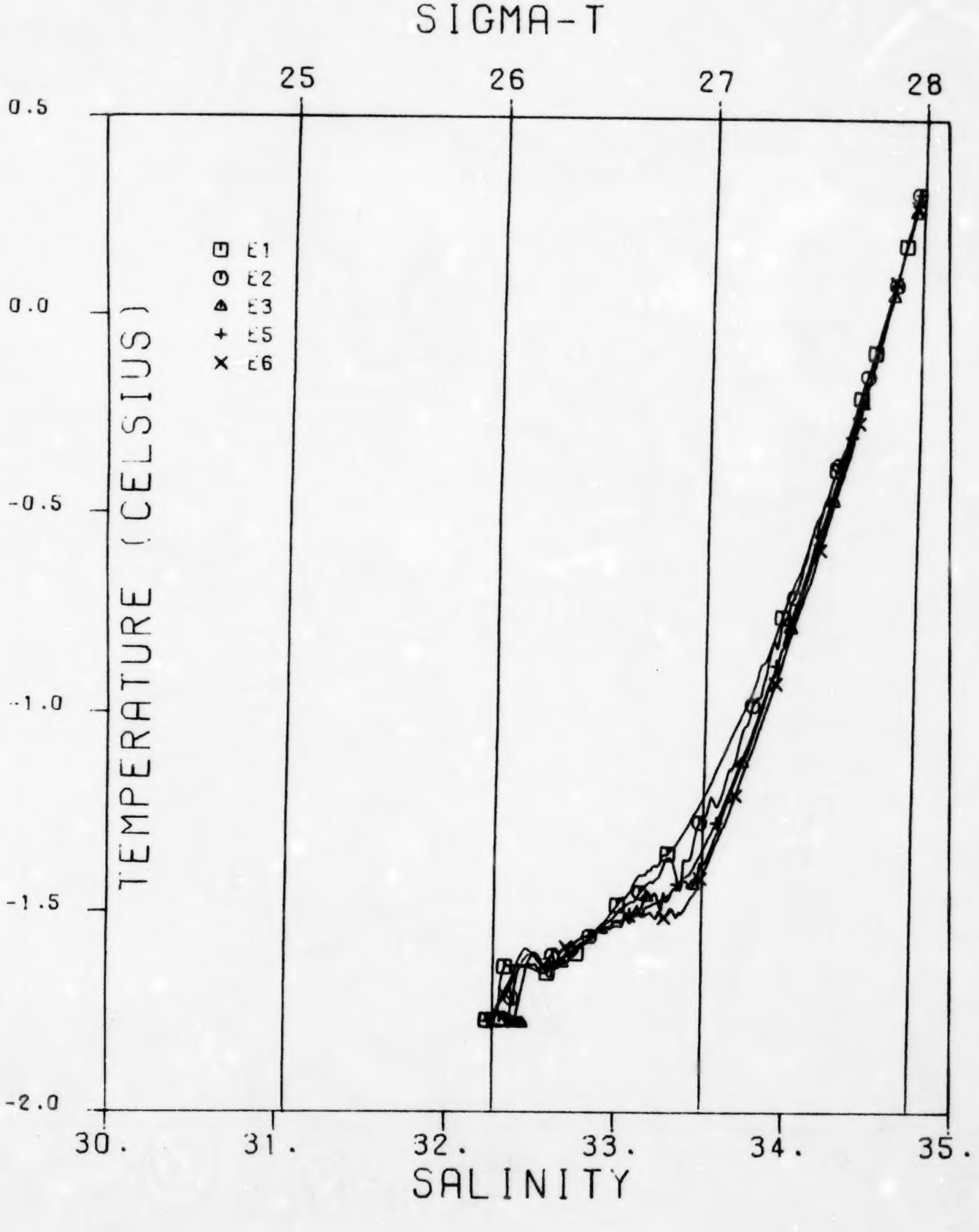
COMPOSITE T-S DIAGRAMS BY SECTIONS

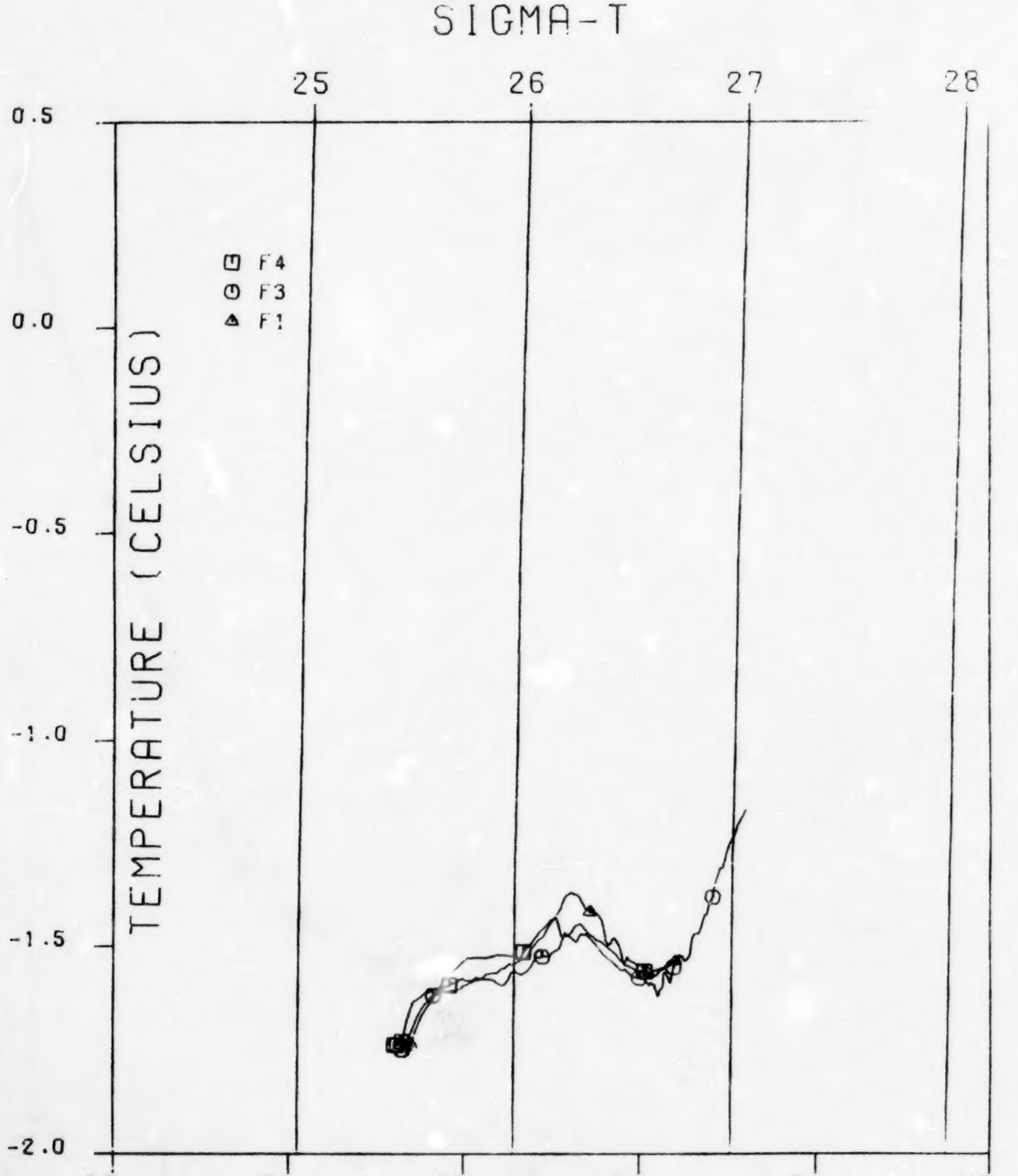
For each oceanographic section, the individual station TS curves are plotted. The symbols on each curve represent the TS values at standard pressures (5, 10, 20, 30, 50, 75, 100, 125, 150, 175, 200, 225, 250, 300, 400, 500 dbar).

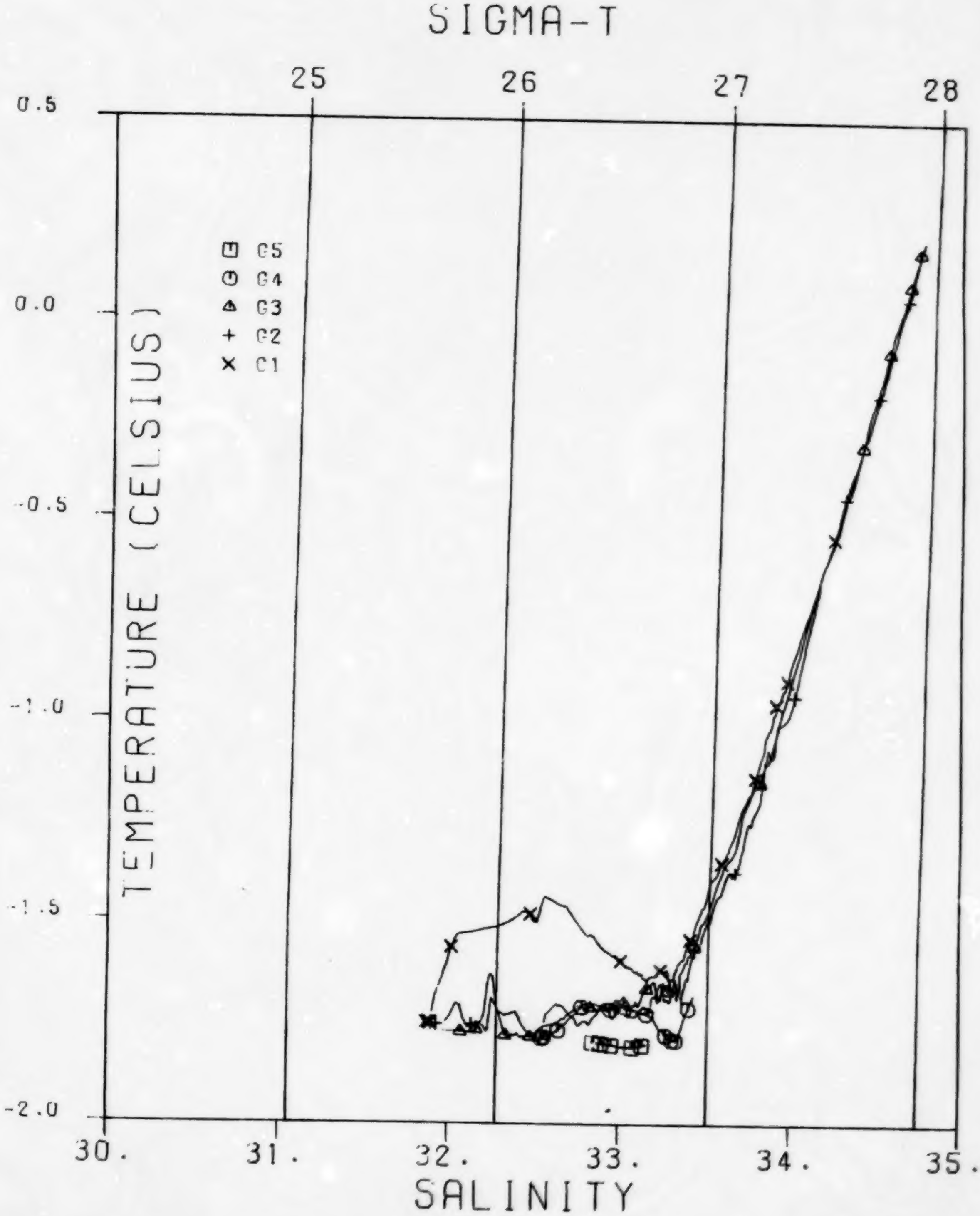

SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
A1
A2
A3
A4
30.
31.
32.
33.
34.
35.
SALINITY

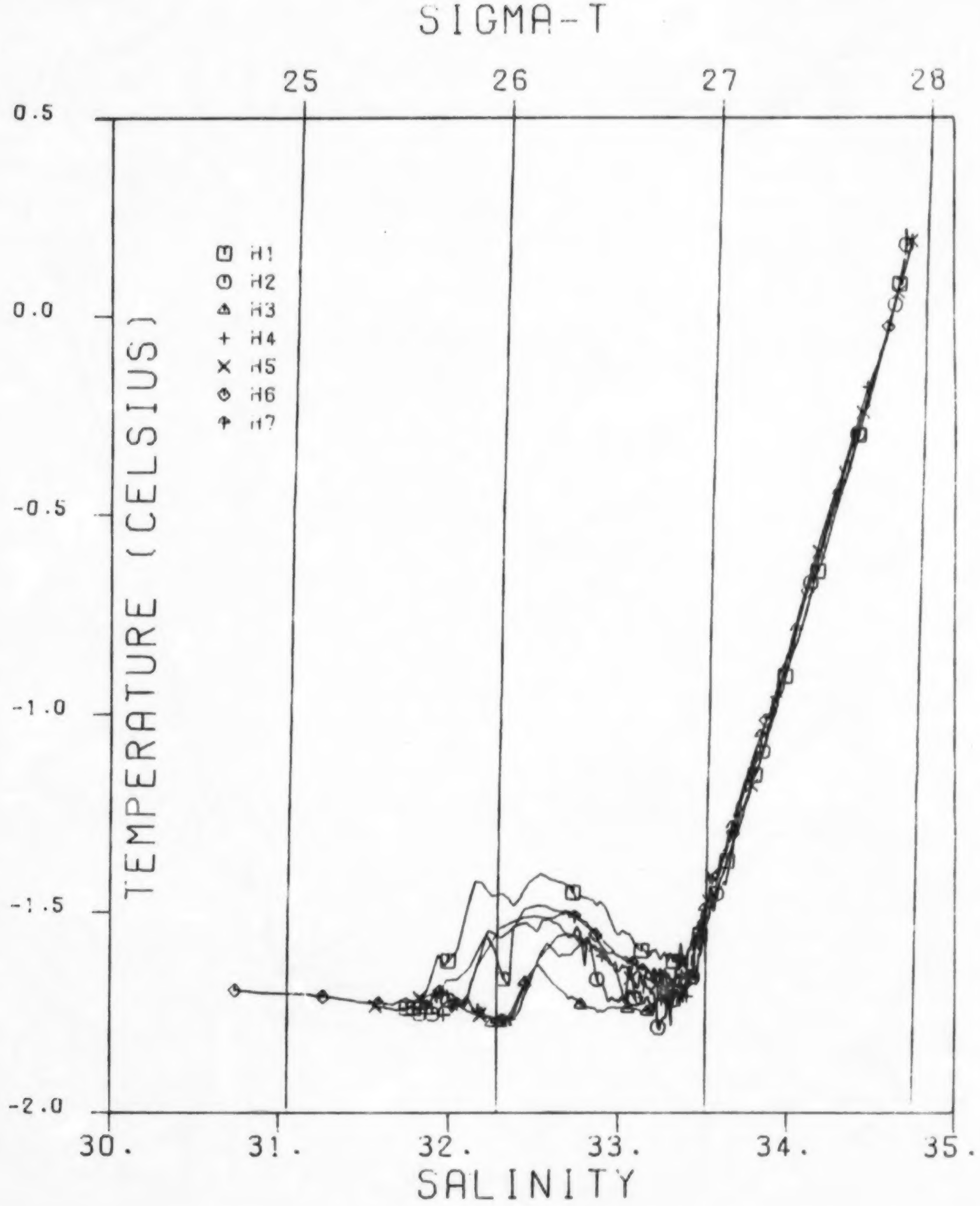

SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
▣ R1
⊙ R2
▲ R3
+ R4
× C1
◇ C2
30.
31.
32.
33.
34.
35.
SALINITY

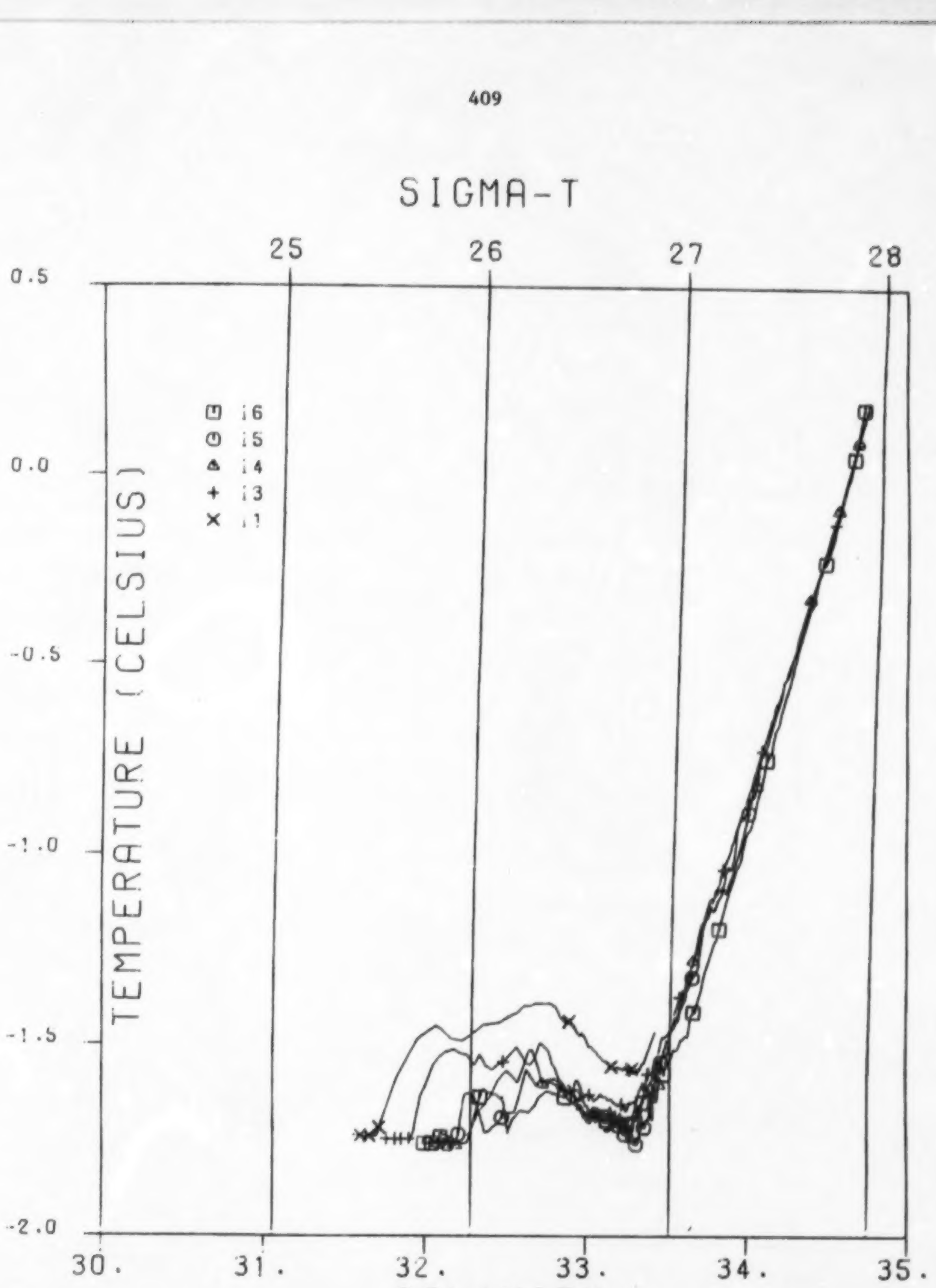

SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
C1
C2
C3
C4
C5
30.
31.
32.
33.
34.
35.
SALINITY

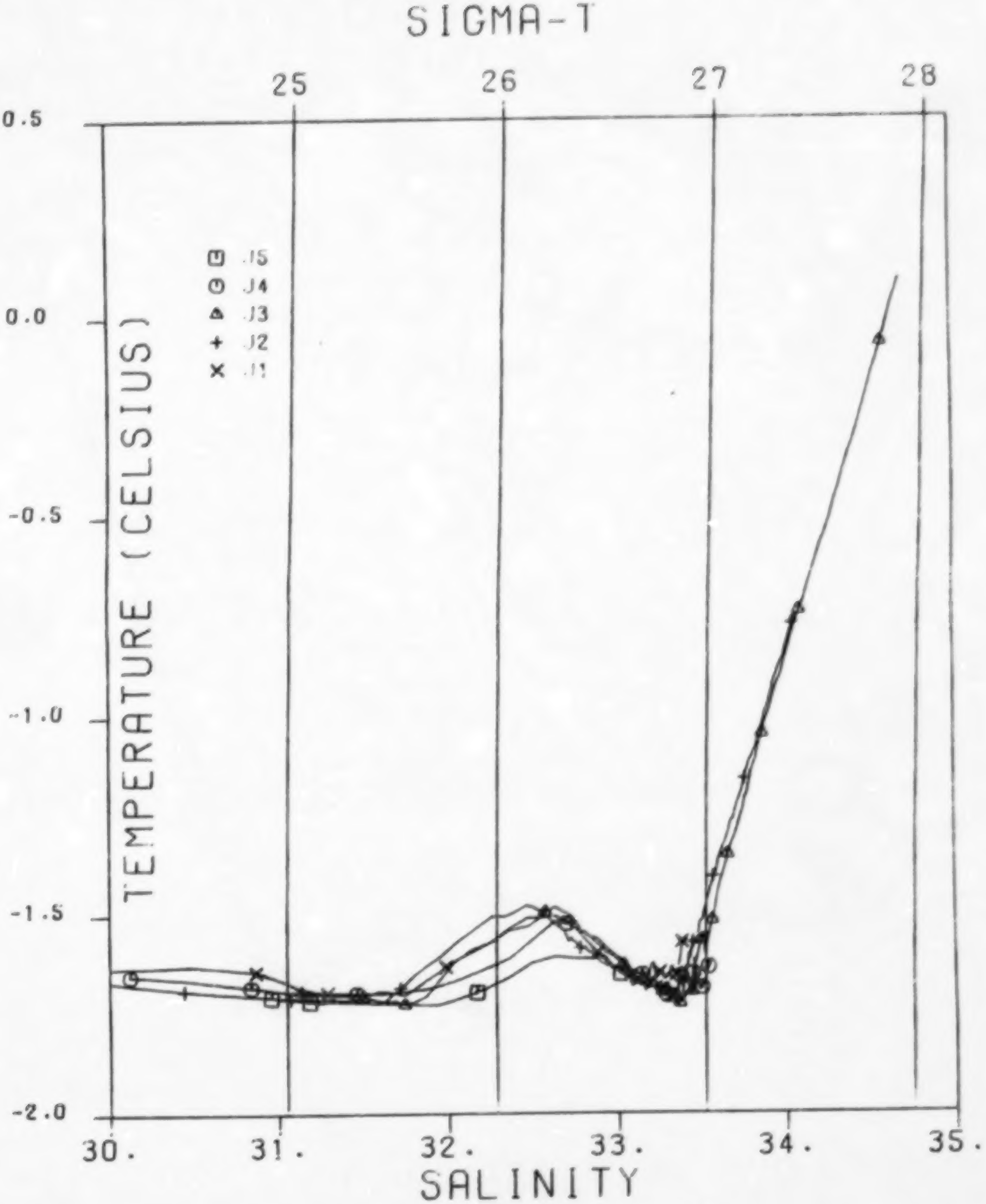

SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
□ E1
○ E2
△ E3
+ E5
× E6
30.
31.
32.
33.
34.
35.
SALINITY

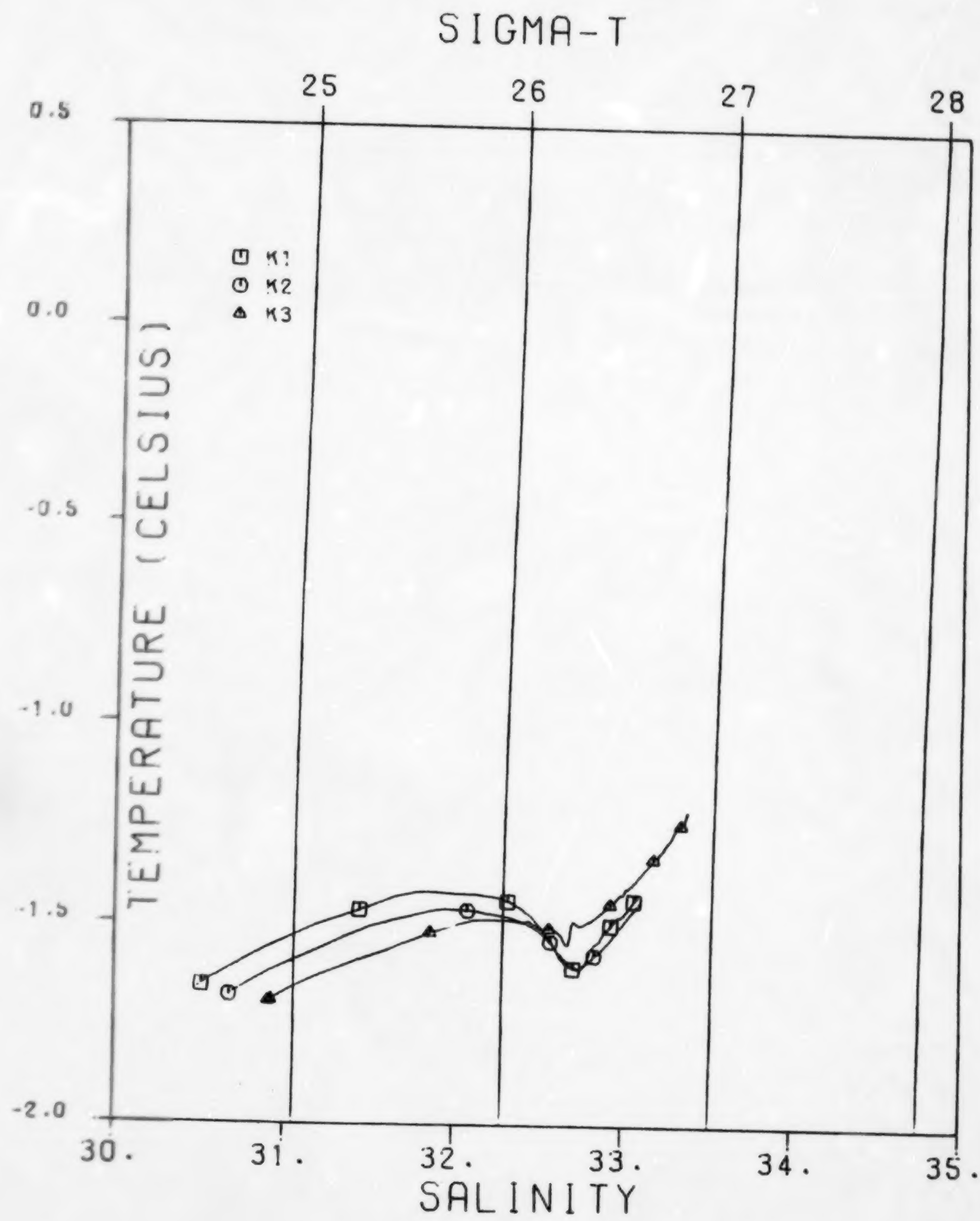

SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
□ F4
○ F3
△ F1
30.
31.
32.
33.
34.
35.
SALINITY

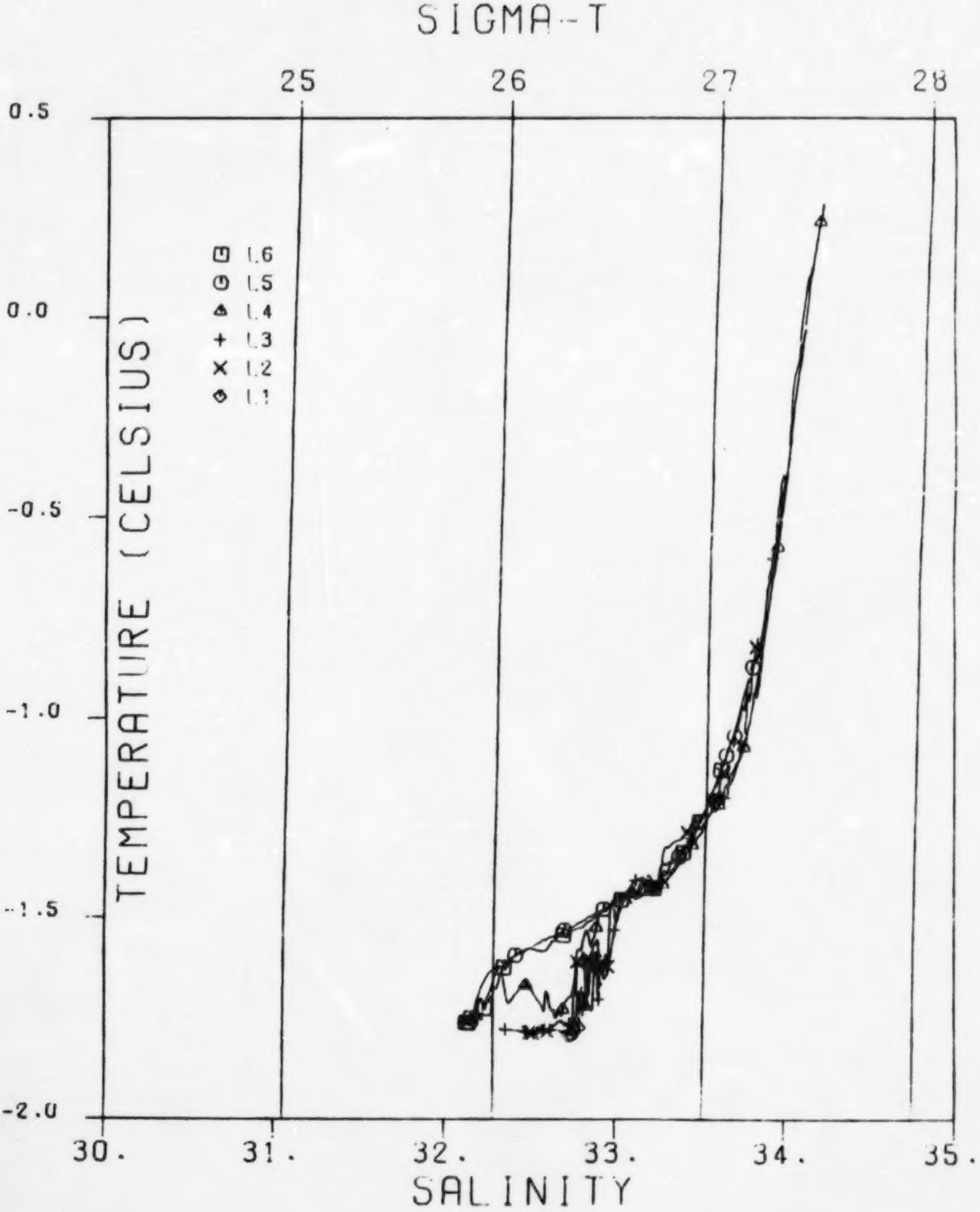

SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
C5
C4
C3
C2
C1
30.
31.
32.
33.
34.
35.
SALINITY

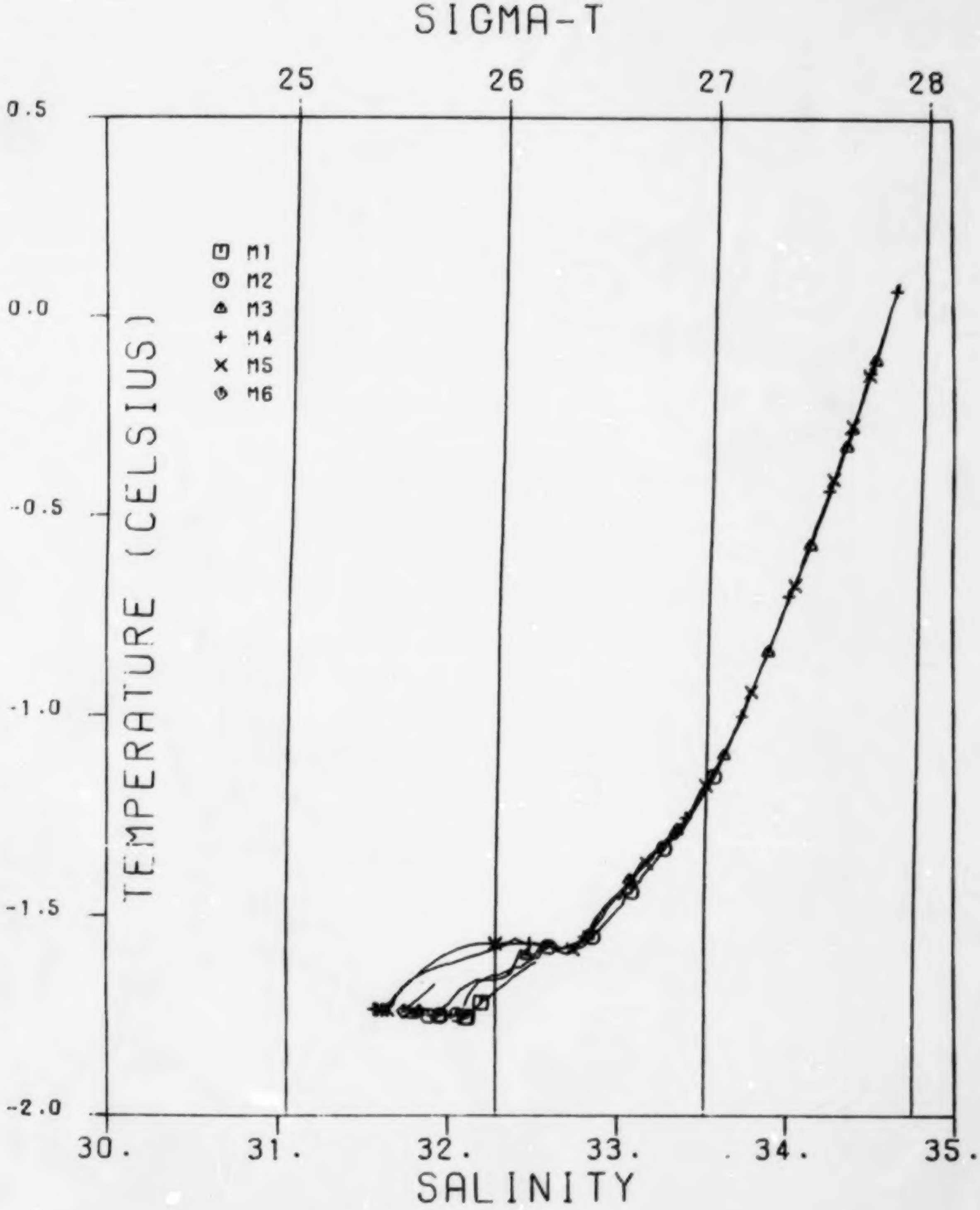

SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
H1
H2
H3
H4
H5
H6
H7
30.
31.
32.
33.
34.
35.
SALINITY

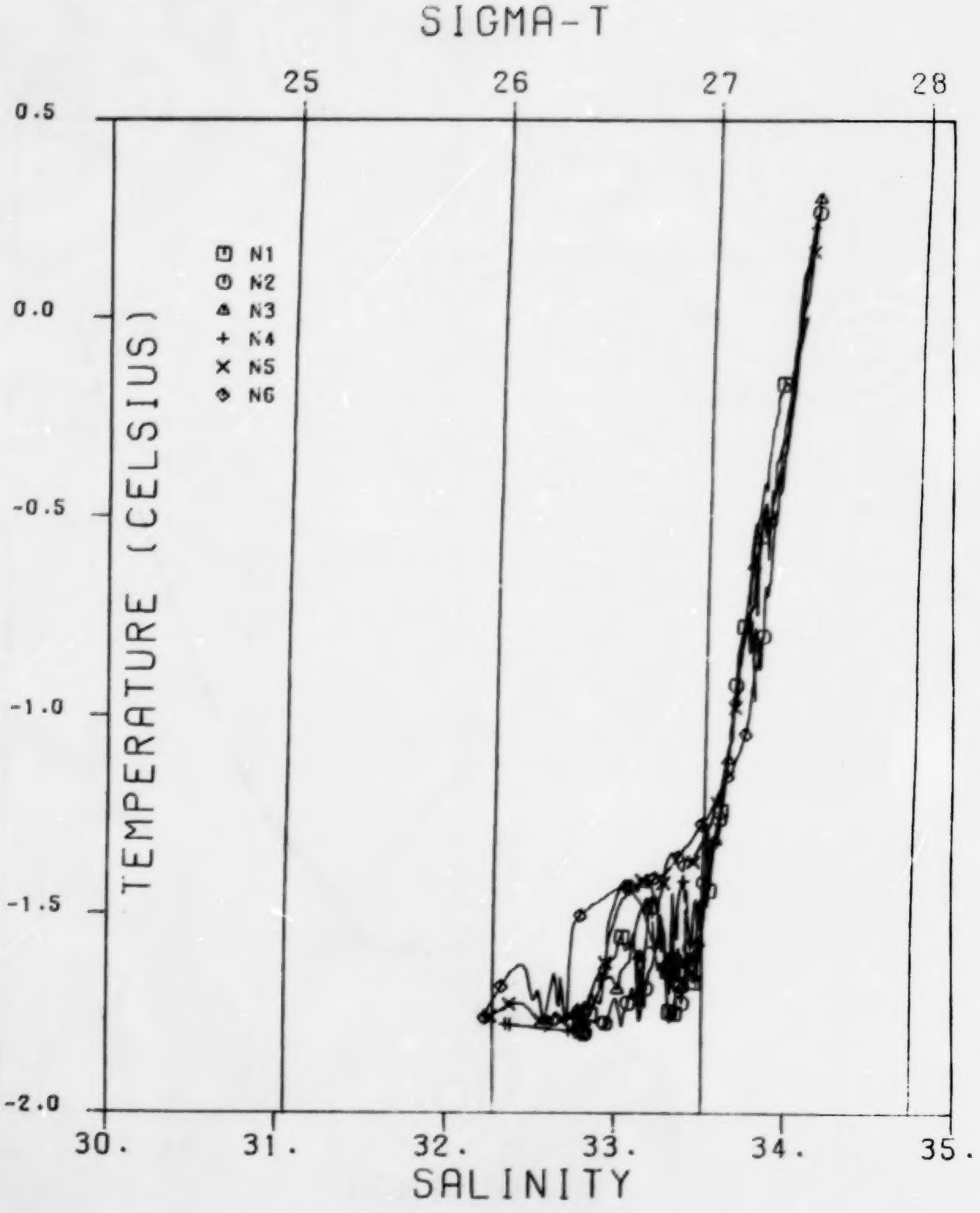

SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
⊡ i6
⊙ i5
▵ i4
+ i3
× i1
30.
31.
32.
33.
34.
35.
SALINITY

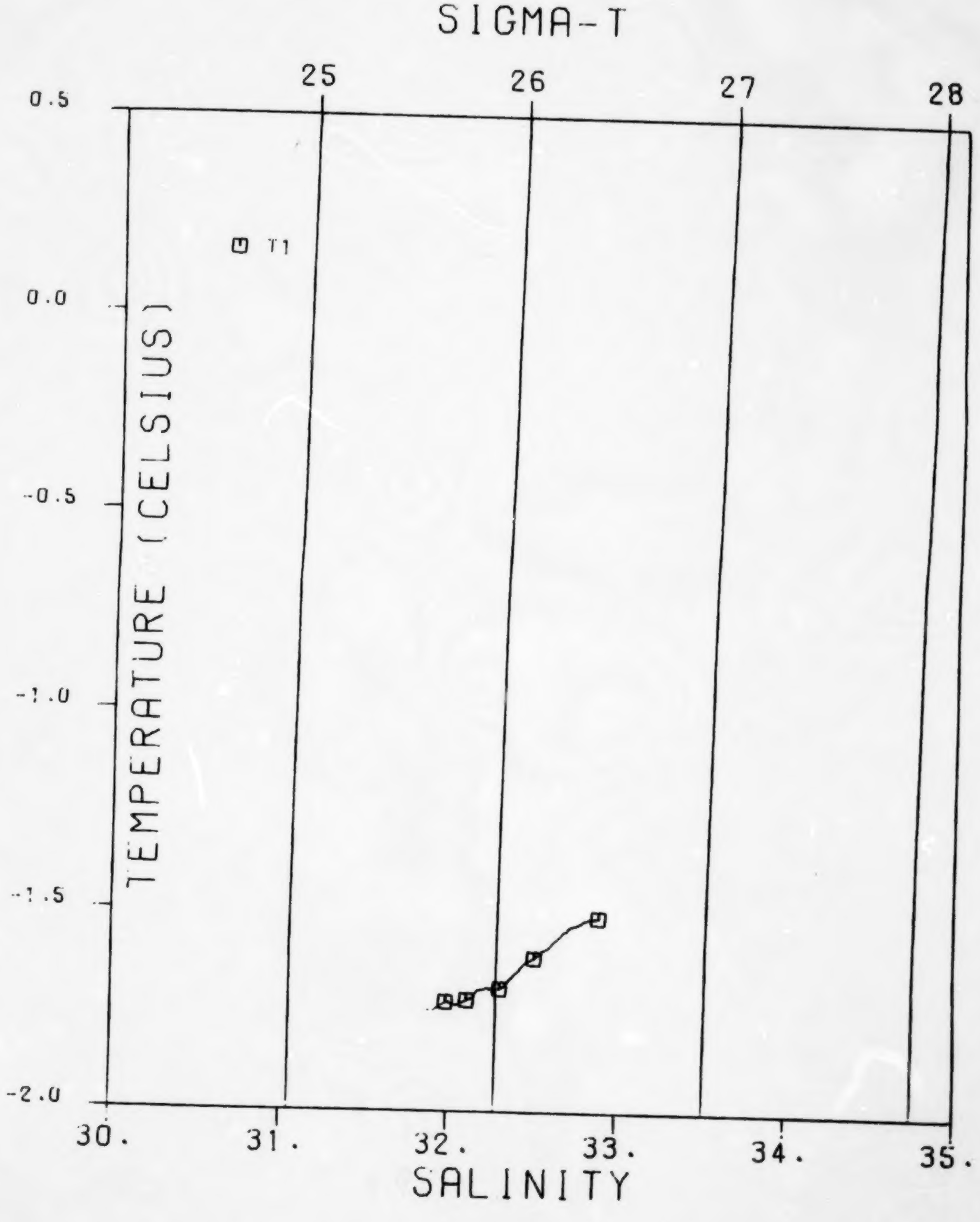

SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
⊡ J5
⊙ J4
△ J3
+ J2
× J1
30.
31.
32.
33.
34.
35.
SALINITY


SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
□ K1
○ K2
△ K3
30.
31.
32.
33.
34.
35.
SALINITY


SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
⊡ L.6
⊖ L.5
△ L.4
+ L.3
× L.2
◇ L.1
30.
31.
32.
33.
34.
35.
SALINITY


SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
□ M1
○ M2
△ M3
+ M4
× M5
◇ M6
30.
31.
32.
33.
34.
35.
SALINITY


SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
N1
N2
N3
N4
N5
N6
30.
31.
32.
33.
34.
35.
SALINITY


SIGMA-T
25
26
27
28
0.5
0.0
-0.5
-1.0
-1.5
-2.0
TEMPERATURE (CELSIUS)
□ T1
30.
31.
32.
33.
34.
35.
SALINITY

POOR

QUALITY

ORIGINAL